IF YOU HAVE FAITH IN YOURSELF,
YOU WILL HAVE FAITH IN IDAHO

IDAHOISMS

IF you have faith in yourself, you will have faith in Idaho. Let's get acquainted. ¶Today, heroes are graduated from the school of hard work. ¶Those afflicted with the "measles of discontent" are not wanted in Idaho. ¶If you "don't know how to bridle a horse," think twice before starting to farm for yourself; then don't do it. Better first hire out as an apprentice to some one who does know how. ¶Equipment for diversified farming in Idaho does not differ from the equipment commonly needed in other diversified regions. ¶There are health and wealth dividends awaiting you in Idaho.

"The farmer's trade is one of worth,
He's partner with the sky and earth,
He's partner with the sun and rain,
And no man loses for his gain,
Men may rise and men may fall,
The farmer, he must feed them all."

Communications should be addressed to

Fred R. Reed

Commissioner Immigration, Labor and Statistics

Executive Commissioner Idaho Commission to Panama-Pacific International Exposition.

The Idaho Commission to the Panama-Pacific Exposition (San Francisco 1915) extend to you a cordial invitation to make the Idaho Building your Exposition headquarters.

F. R. REED,
Executive Commissioner.
BOISE, IDAHO

IDAHO STATE CAPITOL.

"See America First"—Begin with Idaho.

COMMISSIONER OF IMMIGRATION, LABOR AND STATISTICS

SEVENTH BIENNIAL REPORT

1911-1912

IDAHO STATE CAPITOL.

Showing the grand approach and central section of the capitol building, now finished and occupied. The wings on either side will be completed later.

It is located convenient to the business section of the capital city, Boise. It is thoroughly modern, comfortable and shows an architectural beauty worthy of the dignity becoming a great commonwealth.

The stone was quarried near by and finished upon the grounds, as needed. The interior finish reflects a character of refinement that seems to echo a welcome assurance as lasting as the granite foundations and as cheerful as the diffused sunlight which penetrates its every corridor.

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IDAHO STATE CAPITOL.

"See Map of Idaho"

COMMISSIONER OF IMMIGRATION, LABOR AND STATISTICS

SEVENTH BIENNIAL REPORT

1911-1912

EDITED AND PUBLISHED BY
S. J. RICH,
Commissioner.

DESIGNED AND ILLUSTRATED BY
JAMES W. JONES.

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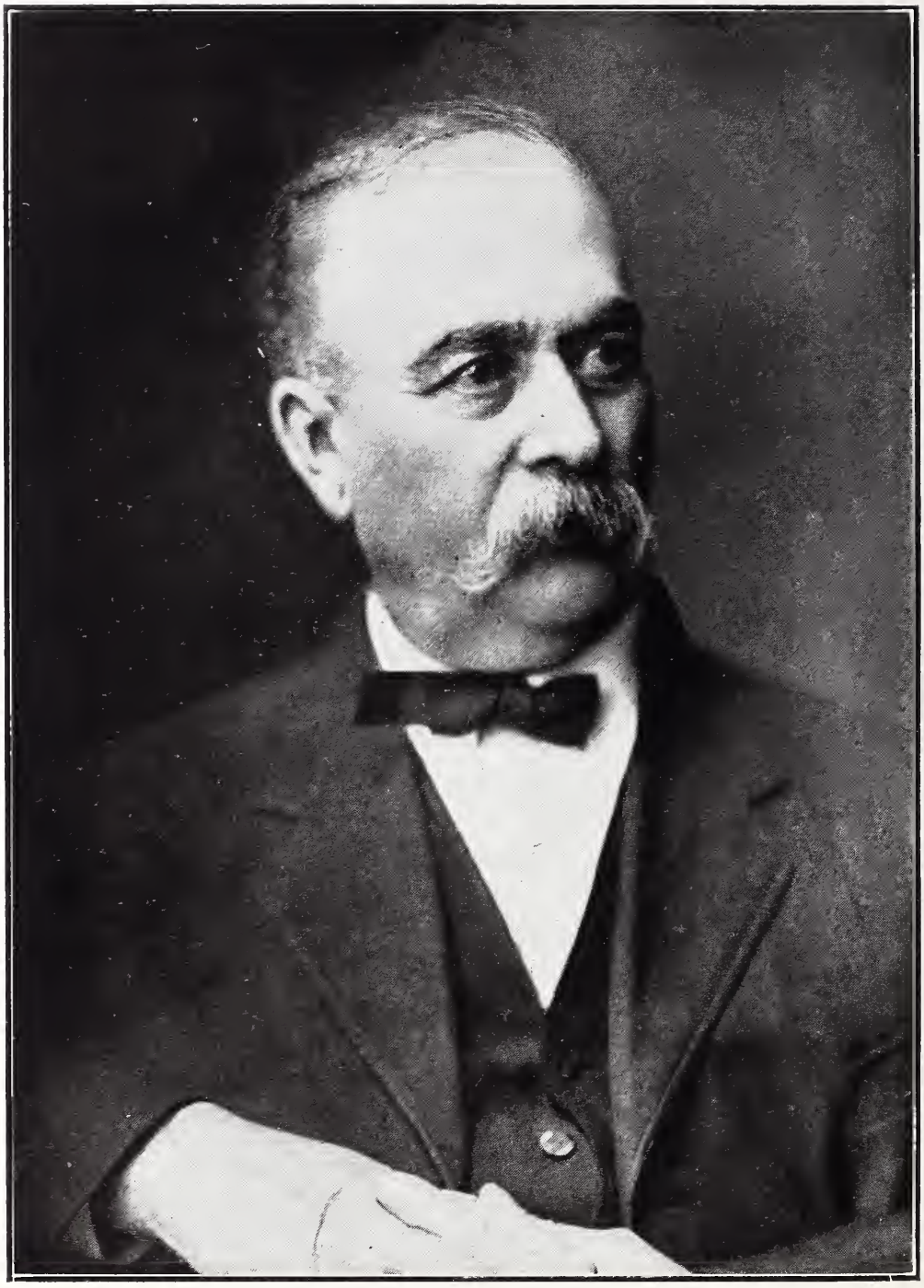


JAMES H. HAWLEY, GOVERNOR OF IDAHO

S. J. RICH
Commissioner of Immigration, Labor and Statistics.

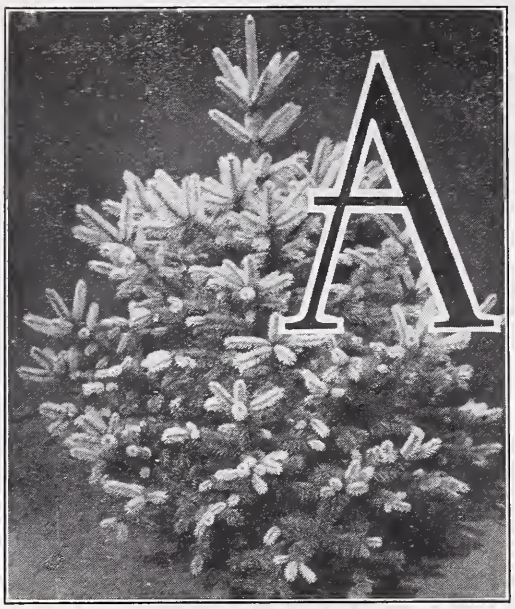
To His Excellency, James H. Hawley,
Governor of Idaho.

In compliance with the Constitution and laws of this state, I herewith present for your consideration the seventh biennial report of the Bureau of Immigration, Labor and Statistics of Idaho for the years 1911 and 1912.

Respectfully submitted,

S. J. Rich,
Commissioner.

Commissioner's Greeting



AS THE OLDER SECTIONS OF THE COUNTRY become settled and developed and reach their prime and begin to retrograde in soil fertility and productiveness, many people begin a search for new homes. As opportunities for the individual to acquire a home and accumulate a competency become rare and more difficult, many people return to the newer districts with renewed hope.

There are, undoubtedly, many such people in different sections of the country who are considering this problem at the present time. There are many others who would be considering it if they could see a way out of their difficulties. This report is prepared for the express purpose of furnishing information to the people of Idaho about their own state. Incidentally, this information will be welcome and helpful to many who are living outside of the state and who contemplate investments or a home, or both, in this splendid young, growing commonwealth. This report has, therefore, a double purpose, first, as a progress report to our own people, and secondly, as a home-seeker's and investor's guide.

This splendid new state, with its many inviting opportunities, offers a decided contrast to conditions that prevail in many of the over-crowded sections of the country. It matters but little in what direction the ambition or natural talent of the individual may lead, Idaho offers safe and certain avenues of utility and progress. There is something in Idaho that will appeal to practically every individual who has an ambition to better his condition. This book contains historical, vocational, statistical and development information calculated to guide safely.

The agricultural lands of Idaho are the state's chief asset. Here, unquestionably, are openings of unusual merit. Even the most skeptical will be pursuaded if he investigates. The phenomenal yields and acknowledged superior products compel a favorable conclusion.

There are now to be had at reasonable prices 216,210 40-acre tracts of land well suited for establishing comfortable farm homes. The irrigation systems are completed and water is now available. In the humid districts where the rainfall is sufficient for growing crops without the aid of irrigation there are thousands of acres of fertile soil awaiting the homeseeker; some of the undeveloped land in the humid district is covered with only a moderate growth to interfere with the settler's first preparation for a crop. Some of the most fertile lands are found in the cut-over districts where the lumbermen have removed the timber. Methods of clearing stump lands have been devised that greatly facilitate the reclamation of the cut-over lands. The districts where dry-farming methods are practiced are now having remarkable development. In addition to the more than 5,000,000 acres of government lands now available to entry under the amended homestead act, the state of Idaho owns vast tracts of land well suited for dry-farming that are sold at very reasonable prices and upon long, easy terms.

All branches of agricultural development, and this means agriculture applied in its broadest term, which covers crop production of all kinds, is having an extremely gratifying development. The tables, maps and other data herewith presented indicate an extremely satisfactory degree of growth.

Our forests and lumbering interests are branches of our agricultural development not fully understood or appreciated by even our own citizens. All readers, no matter where they may be located, will be pleased to learn of the splendid resources that Idaho has yet to offer along these important economic lines. The mining industry is having a steady and commendable growth; the mining industries last year yielded a total of $23,500,000. It is commonly known that only a comparatively small

area of the state has as yet been prospected. Mining has become a science worthy of the best skill that trained men can offer. The returns from the mining industry are no longer hazardous and uncertain, as was experienced in the early history of its development

The development of the great hydro-electric power plants has been co-ordinate with the development of our gigantic irrigation enterprises. The production and wide distribution of this electrical power has served as an important magnet in the reclamation and development of our state.

Our own people have always appreciated the delightful and healthful climate and the natural scenic beauty of our rivers, lakes and mountains. There has always been a liberal amount of wholesome recreation and health-giving pleasures largely intermingled with the social, industrial and economic development of the state; all these great natural assets are coming to be widely appreciated by thousands of people who have chosen our more inviting districts for their vacation and recreation grounds.

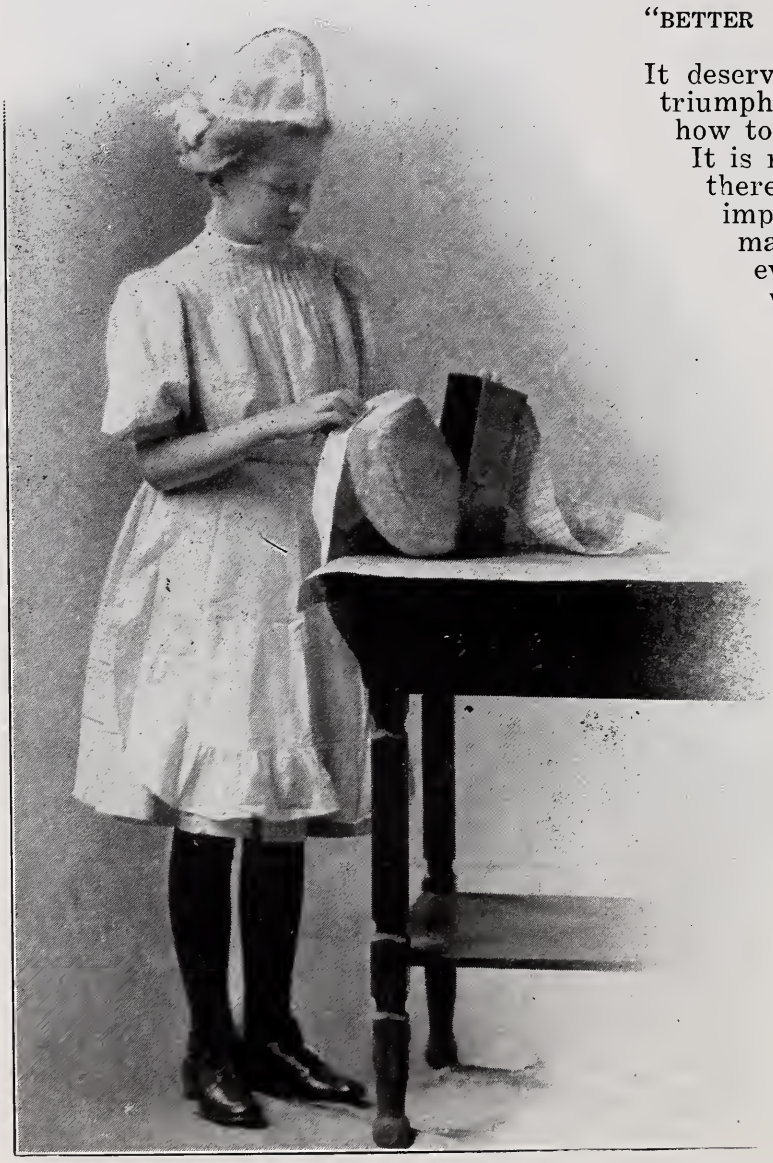
We entertain the sincere belief that the wholesome, safe, and, if you please, rapid development of the state is conducive to the very best growth and development of *all* of our states. Idaho already occupies a position of vast economic importance in the welfare of our entire country.

Respectfully,
S. J. Rich,
Commissioner.

SEE IDAHO FIRST—BEGIN WITH THE PAYETTE LAKES.

The "Now-Time" In Idaho

ONE naturally thinks of a new state as a place where the person with limited means can get a start, own a home and accumulate property which will become valuable after a few years of time. There are many thousand people now living in Illinois and other middle-west states who acquired a quarter-section or a half-section of land at $20.00 to $30.00 per acre—many for even less, thirty or forty years ago, and today that same land is worth from $150 to $250 per acre. A part of the increased value comes from the improvements that have been put upon the land, but the chief cause for the increased value is due to the development of the surrounding country and markets.



"BETTER THAN MOTHER USED TO BAKE."

It deserves to be regarded as an hour of triumph for any girl who has learned how to bake a really good loaf of bread. It is rather a common-place subject, but there is really no subject of greater importance to any girl. For that matter, most great things in life are every-day things that have to do with the comforts and welfare of people and the development of the highest type of useful citizenship.

Her expression indicates that she is proud of her achievement. Her mother says, "Better than Mother used to bake" which is a benediction worth while. When she has finished the execution of a difficult and beautiful musical number that has pleased and thrilled an admiring audience, the applause that goes up to her across the foot-lights serves as an incentive to greater effort and causes her to feel that her many hours of patient effort have been well repaid. That, too, is an hour of triumph, because music is an accomplishment worthy of great effort. There are no opportunities for spectacular approval when she has finished the loaf of bread, but others will share with her for years to come the pleasures and comforts that come because of her culinary skill. Many of our Idaho schools recognize the value of developing talent in household science and girls are taught how to do the common every-day things that mean well regulated homes, healthful, wholesome living and real happiness.

Public highways have been drained, graded and cared for; telephones reach out from the towns into all communities; railroads furnish transportation, and the markets of the world have been opened for all crops and manufactured products. Villages at frequent distances offer markets and shipping facilities and social centers; towns have become cities, and the cities have developed manufacturing and commerce and furnish splendid markets. The increase in the value of farm lands is a great wealth contributing factor. Perhaps the reader has experienced this transformation from the new pioneer home to the highly developed stage and now desires to start the sons where they may share similar opportunities. Idaho offers many parallel opportunities as compared with Illinois and surrounding states in the fifties and the sixties and the seventies.

Illinois voted township and county bonds promoting railway extensions. Idaho is yet a new state but there are no bond bonuses. There is probably not a state in the Union where railway extensions are more active than in Idaho. There is sufficient traffic for new lines, beginning the first season, to earn a fair rate of interest upon construction cost, above the cost of operating. There are dry-farming districts that five years ago did not ship a single car of grain that will this year ship more than 500 cars from a single station. Last year more than 5,000 cars of alfalfa hay were shipped from a station in an irrigated district that has been established but six years.

There is always a thrill of enthusiasm with the coming of the new railroad. Villages become thriving towns and the surrounding country develops rapidly with all modern conveniences. Fortunes are made within a few years by the person with red blood, energy and a disposition to share the responsibilities of a rapidly growing community. Here the farms are growing smaller. The large stock ranges are being sub-divided. Dry farming, however, will always mean extensive farming. It is a common practice in some dry farm districts for the family to live in a nearby village or town where school and churches are convenient. The amended "dry farm" homestead laws permit this and residence is not required upon lands purchased from the state. In the irrigated districts, small farms prevail, which means dense population, close neighbors and often centralized graded schools. In the humid districts of Idaho population is distributed upon the farms much the same as in the humid districts of the middle west. The great hydro-electric power plants have distributing lines reaching into large areas of farming territory and electricity is commonly used for lighting and heating and cooking and serving many domestic needs in the country as well as in town. Manufacturing receives an impetus because of cheap current for operating. Idaho has started development upon a modern scale. Pioneering always means plenty of work, but most of the hardships that prevailed with many older states are unknown here. There are good reasons why Idaho should be more modern. It is one of the newest states in the Union, in point of development. The following tables clearly indicate the growth and rapid development.

IDAHO, THE "GROWINGEST" STATE IN THE UNION.

	POPULATION				Steam R. R. Mileage in Idaho
	State of Idaho	Percent Increase	Boise, Capital of Idaho	Percent Increase	
1870	14,999		995		
1880	32,610	117	1,899	90	206
1890	88,548	171	2,311	21	941
1900	161,772	82	5,957	157	1,267
1910	325,594	101	17,358	191	2,134
1912	385,094				

	FARMS		LAND IN FARMS		Average Value of Land and Building per Acre
	Number	Percent Increase	Acres	Percent Increase	
1870	414		77,139		$ 5.11
1880	1,885	355	327,798	324	8.64
1890	6,603	250	1,302,256	297	13.39
1900	17,471	164	3,204,903	146	13.20
1910	30,807	76	5,283,604	65	46.38

Statement of the number of settlers who arrived at the various points on the Oregon Short Line Railroad in Idaho, and the Amount of emigrant movables shipped into Idaho during the years 1911 and 1912.

Month	Number Persons		Number Shipments		Weight of Shipments	
	1911	1912	1911	1912	1911	1912
January	575	471	234	195	1,317,810	906,026
February	768	688	283	257	2,047,185	2,085,172
March	1233	1248	455	445	4,438,285	4,371,195
April	867	1234	357	403	2,372,624	3,256,797
May	705	845	311	327	1,348,537	1,832,173
June	614	667	243	259	1,229,067	1,309,847
July	557	626	235	243	1,086,947	1,247,006
August	541	638	227	247	1,181,844	1,346,448
September	703	673	296	274	1,611,325	1,529,138
October	880	821	366	373	1,847,929	2,557,699
November	782	780	312	314	1,990,864	1,991,624
December	710	714	266	272	1,408,553	1,410,316
Total	8935	9405	3585	3609	21,880,970	23,843,441

The consistent, rapid growth as shown by these tables must indicate that Idaho has a just claim to the slogan "The 'growingest' state in the Union." The reason is easily understood. The mining industry, which gave the state the first employment and wealth, has produced constantly and consistently. Investors operate upon well-defined lines and have largely eliminated speculative uncertainty.

The live stock upon the open ranges furnished the first agricultural development. Earnings from the mines and ranges have built comfortable homes, business blocks, established banks, built railways, sawmills and constructed gigantic irrigation enterprises.

Agriculture, as applied to all domestic farm products, will always be the state's greatest wealth producing resource. Closely allied is agriculture as related to the forests of the state.

Mining and the range herds will continue to be important affiliated industries that furnish profitable employment to large numbers and will yield even larger financial returns in the future. Manufacturing is making steady progress. Transportation is now having its greatest growth. With the further development of the Columbia-Snake River water course, more regular boat service will be established to Lewiston, Idaho, which is the most interior seaport of the entire northwest. This district is destined to become of vast strategic importance in transportation matters.

Most of the larger development enterprises have had the guiding influence of a pioneer hand. This always inspires confidence with outside capital. Idaho laws were carefully framed, avoiding the errors that caused grief to sister states.

Even after the withdrawal of large forestry areas, there are yet millions of acres of land still available for agricultural and mineral development. The withdrawn areas within the National Forests serve three distinct purposes:

(a) Regulate the timber supply and through a careful forestry system will make a great lumber industry perpetual. (b) The protected forests serve in a vital way to conserve the rainfall and the melting snows upon the water-shed or drainage areas that supply the streams, thus regulating the run-off, eliminating floods and equalizing the flow. (c) Limits and regulates grazing upon the reserves and thus protects young forestry growth and furnishes cheap grazing for millions of head of live stock that are brought to the lower levels for wintering and finishing the herds. Through systematic patrol, fire risks are reduced to a minimum.

With this large protected forest area, located mainly at high altitude, protecting the drainage areas feeding Idaho streams, the flow of irrigation water and water for power plants is made dependable. Large capital has not hesitated to invest where such natural advantages exist and where laws had been intelligently framed and enforced. The reader must readily understand that development has gone forward at a rapid rate. A growing country appeals to every person who has ambition. The natural advantages are such that Idaho's growth will be stable and of a permanent character.

There are several contributing factors why Idaho will continue to grow and develop as a wealth producing state and appeal to a high type of citizens.

The climate and natural environment are superior. The range of the Rockies to the east and the Cascades to the west protect the inter-mountain district from devastating storms that levy heavy tribute against crops, property and human life in the less favored regions. There are, therefore, almost no devastating risks to be carried.

The state's development is guided and protected by thoroughly modern and well-enforced laws. Capital receives fair and absolutely just treatment and no more. The citizen with limited means has ample protection and a just share of the opportunities afforded by a naturally rich, virgin country. It is commonly remarked that extremely few errors have been made in the administration of state or local laws, notwithstanding the rapid development that has occurred throughout the state during the past few years.

There are large areas of very superior agricultural lands that have natural fertility that produce a wide range of wealth-yielding crops.

The water supply is without doubt superior and more dependable because of the high altitude and naturally protected drainage areas that will forever remain under the direction of the state and national governments and serve as a perpetual insurance policy. The citizens have realized that growth and evolution were calling for readjustment almost continuously. Fortunately, the element of speculation has been "soft-pedaled" and the investor and homeseeker who come in to share our responsibility and our "health and wealth dividends" have been attracted because of the real merit of the community and state resources. This has given the state a degree of stability not commonly found in a new state that is growing rapidly. An unusually high type of citizens with modern, progressive ideas have established homes and become a part of the state's activities.

The stranger who visits the state for the first time readily concludes that the "Now-Time" in Idaho is an auspicious time. The foundations have been wisely and broadly planned. The homeseeker and the investor in the past have done extremely well; the growth and development in the future are even more certain. The successful achievements of the past decade furnish a momentum of vast value for future developments.

This brief retrospective review will be more thoroughly understood and appreciated by our citizens who have been actively identified with state development. To those unacquainted there are many pages of vocational information with illustrations in this report that are commended for your careful thought. Only a few vocations and industries can be treated in one volume and they are necessarily brief. Enough is set forth to clearly indicate that the world at large needs enormous quantities of Idaho products. The production and distribution of these products means the creation and distribution of great wealth. This wealth is being widely distributed. An equitable distribution of wealth spells loyal prosperity and a splendid commonwealth citizenship.

The people of Idaho are to be congratulated upon having such splendid climate as a foundation upon which to build all other enterprises. With a wealth of health, all things are possible.

The state has land endowments that accumulate a large fund for the benefit of state institutions and the public schools.

A wide range of markets are open, through the development of coast distribution and exports as well as interior distribution.

Mineral deposits that will yield dividend wealth, liberal employment to labor and a great consuming market for food products.

It is worth while to be alive to the "Now-Time" in a new state. If you have faith in yourself, you will have faith in Idaho.

MISS IDA HO, QUEEN OF THE HARVEST.

Where Dimpled Coupons Grow

MISS IDA HO, Queen of the Harvest, ushers in the Dawn of Plenty. Her throne commands an army of willing workers who strive to do her bidding. Her will is prompted by a generous impulse to aid in feeding a hungry world. Her purposes are as pure and lofty as the Teton snow-capped peaks that sparkle in the noon-day sun and reflect the last rays before the close of the parting day. From these peaks there floats to a tired world an eventide benediction of cooling, fragrant breezes that are wafted down through pines and spruce and noisy rills that woo to restful sleep her commonwealth family of 385,094 souls.

Watchful and thoughtful are the evening hours of the queen. Her thoughts are those of love and a kindred fellowship that bring mankind close to the wise Creator's throne, who provided for her such generous tributes of natural health and wealth. On the morrow there will have entered her domain scores of newly made friends in search of health and wealth and homes for families who are hungering to participate in the joys, labors and rich rewards awaiting those who are willing to share the companionship of a beautiful, rich young commonwealth. Men with red blood and knightly mein vie, one with another, to do her honor.

Hers is a queenly bearing, suggestive of the dignity that becomes the ruler of a domain whose annual harvest of food, fleece, forest and mine exceeds an hundred million dollars—far greater than was the yield of the thirteen original states when the American flag was born.

Her scepter is not a sword, but a golden symbol of plenty, that assures Uncle Sam, her god-father, of a bread supply for all the nation. None shall go hungry so long as her irrigated tracts and the millions of acres of free homestead lands shall last. Harken thou, to a word of warning! Many will be late, too late, for free homes. The landless man is claiming her manless land at the rate of more than two million acres a year.

Her crown of gold is not of sordid wealth but rather of Nature's growing wealth, yielded annually and abundantly and enough that all of the world may share its golden glory.

Her gown is not of gaudy fiber, but rather a pure white gauzy raiment embellished with the choicest grains and grasses from her fifty-five million acre domain. There is a refined symphony of Nature's gifts as they drape from across her breast to her gown entrain.

From about her form there arises the protection of gallant chivalry. The rugged Rockies to the east, which reach far to the north, turn from her path the devastating storms. From the Cascades to the west there comes the echo of a thundering mellowed by the kindly Chinook. The first ray of morning sunshine that reaches over the mountain range and awakens the slumbering valley, carries a message of life, growth and development. These golden messengers reach their zenith from the southern skies and round out a useful day that leaves the richly colored blush to the fruit, which finds expression in health dividends shown by colored coupons worn temptingly upon her cheeks. Stealing coupons is an indictable offense; convictions, however, upon state's evidence, are rare.

Miss IDA HO, Queen of the Harvest, bids thee welcome to a home in her rich empire, The Gem of the Mountains, where dimpled coupons grow.

The New Era

James W. Jones.

THE ARCHITECT plans a building for a specific purpose. The builder assembles material and the structure is erected in a regular, systematic order. Different kinds of building materials are required for different purposes. Just so with the farmer who plans a series of crops. Crops are built from different elements of plant food, processed through the soil with moisture, heat, air, and sunshine. Crops do not grow from nothing any more than buildings are erected from nothing.

The science of architecture and the art of building has come down to us through centuries of time. Unfortunately for agriculture, many of the early scientists studied the moon and stars and far-away planets, and neglected common, near-at-hand subjects, such as soil fertility. Much has been known for centuries concerning the movement of the planets and their functions, but only very recently has science known anything about the soil beneath our feet, and the elements of plant food contained within the soil from which crops must be built with which to feed our hungry millions of population. For long decades thousands of the poorer classes were gaunt and hungry much of the time. Surplus grains and foodstuffs were not accumulated, except for the needs of the wealthy few. There were no great elevators and bonded warehouses. When weather conditions were just right, crops were plentiful and the labor that produced the crops was poorly paid. When weather conditions were wrong, crops were short and many people were half fed for months at a time. Science and skill were slow to devise a calendar and a systematic method of crop production. In spite of virgin soil that was naturally fertile, there was no crop certainty. There was nothing akin to crop management or equalized distribution of crops. Food production was not only uncertain, but laborious and underpaid. During the reign of Cæsar, it required nearly five days of labor to produce a bushel of wheat. During the days of our grandfathers, it required one hour's labor to produce a bushel of wheat. With skill and modern appliances and proper soil management, here in Idaho, it now requires less than ten minutes' time to produce a bushel of wheat. It requires about eight bushels of wheat per capita per annum to provide bread for the people of the United States.

In 1860, 62% of the people of the United States were engaged in agricultural pursuits. Today less than one-third of our population must produce the food crops to sustain not only the population of the United States, but many hungry millions abroad who depend upon our surplus products to satisfy their daily demands.

Scientific invention provided improved facilities for planting and harvesting the crop long before science unfolded the mystery of *how crops grow*, and what they were made of. This resulted in ill-balanced methods that impoverished the soil in most of the best agricultural states. The very low average yield per acre with

practically all crops, as shown by statistics, furnishes convicting evidence on this indictment.

In point of development, Idaho is one of the newest states in the Union. Fortunately, the skill of the inventor, capital and the manufacturing world have provided highly developed farm equipment that greatly relieves the drudgery that formerly prevailed in crop production. Equally as important is the fact that agricultural science has intelligently analyzed soils and crop problems and tabulated weather and precipitation records and today the rule of superstition and guess has been superceded by the power of knowledge and a definite system.

A PERMANENT AGRICULTURE.

While many of the older states ponder over decreased yields and degenerated quality in crops, Idaho is sending a message to Uncle Sam with an insurance policy against agricultural want. *The world's greatest problem today is the food problem.* The high cost of living is an every-day tragedy in thousands of homes. Crop production is the basis of food supply. Moreover, the volume of commerce of the world is based upon the *surplus* farm crops. The success or failure of any one of the staple crops for a single season is promptly reflected upon the business barometer.

The United States has become an important unit in the production and distribution of the world's food supply. Idaho is rapidly becoming an important state in the production of a goodly surplus of food to supply the demands of a hungry world. Portland and the Puget Sound ports are fast becoming important gateways to foreign markets. In 1910 these ports exported 24.4% of the wheat and flour shipped from the United States. In 1911 the per cent leaped to 45. The first ten months of 1912 showed 31%. The close of the year will have a record greater than 1911. The great cities on the Pacific coast are growing faster than is food production. A large part of the requirements of these cities and all export surplus must necessarily come from the interior. Water transportation and a water grade for rail transportation argues for reasonably cheap rates.

At the present rate of increase of population of Continental United States, an increase of nearly twenty million bushels of wheat must be grown each year to provide bread for the annual increased population. The wheat area of the United States has shown some expansion, but the declining average yield in the older states shows the total annual production declining. Idaho is responding to the decline and before the close of this decade will be producing an annual average amounting to more than 60,000,000 bushels, which is more than is being produced in any one commonwealth now. This will be wholesome assurance to the reader who studies the appended table:

A TABLE THAT EXPLAINS THE BREAD PROBLEM TRAGEDY.

The United States Wheat Crop, Production, Prices and Exports.

	Acreage harvested—Acres	Avr. yield per acre, bushels	Production	Average farm price per bu., Month Dec.	Lowest cash Chicago price Month Dec.	Highest cash Chicago price Month Dec.	Domestic exports including Flour.	Per cent of Crop exported
1901	49,896,000	15.0	748,460,000	62.4	$ .73	$ .80	234,772,516	31.4
1902	46,202,000	14.5	670,063,000	63.0	.72	.78	202,905,598	30.1
1903	49,465,000	12.9	637,822,000	69.5	.78	.87	120,727,613	18.9
1904	44,075,000	12.5	552,400,000	92.4	1.15	1.22	44,112,916	8.0
1905	47,854,000	14.5	692,979,000	74.8	.83	.90	97,609,607	14.1
1906	47,306,000	15.5	735,261,000	66.7	.73	.75	146,700,425	20.0
1907	45,211,000	14.0	634,087,000	87.4	1.04	1.09	163,043,669	25.7
1908	47,557,000	14.0	664,602,000	92.8	1.06	1.12	114,268,468	17.2
1909	44,261,000	15.4	683,360,000	99.0	1.06	1.20	87,364,318	11.9
1910	45,681,000	13.9	635,121,000	*88.3	1.04	1.10	69,311,760	10.9
1911	49,543,000	12.5	621,338,000	*87.4	1.05	1.16	.....	.....

*The decline in farm price per bushel is due to the fact that the surplus crops are produced where higher freight rates prevail.

These statistical facts are shown to impress upon the reader's mind the importance of securing a farm in Idaho where soil fertility, climatic environment and geographical location will allow the family to become established in a comfortable way, and where crops can be produced for many generations without an embarrassing decline in crop building material and marketed to good advantage. Those familiar with the public domain know that but comparatively little desirable land is yet available. The signboards pointing the way to new, cheap, fertile lands are already timeworn and weather beaten. There is but one crop of land. Uncle Sam has no reserve

supply. Free lands are almost gone—2,312,200 acres of the public domain in Idaho were selected and filed upon during the year 1911. A greater acreage was claimed in 1912. This does not include Carey Act selection. Desirable, cheap lands are rapidly becoming converted into productive, high-priced farms. It behooves the landless man to be on the alert.

Idaho soil yields in a prodigal way. The crops are not of a half-hearted character nor spasmodic, nor will they be short-lived. The wide range in variety of crops is quite as remarkable as the yield and the certainty. The wide range in variety of crops argues strongly for a well balanced rotation and diversified farming. That means a permanently profitable agriculture.

Among the grains, practically all are profitably grown, except corn, and corn is coming to be a regular crop in several districts. With grains and grasses, every community has its choice, but all are found in most counties of Idaho, and among the fruits, the various varieties keep the packing houses and canneries busy from June until November.

An important sequel to this unusually wide diversity of crops is the uniform distribution of practically all necessary elements of soil fertility. In the middle west, different glacial periods furnished different types of soil with varying deposits of soil fertility. There are two general forms of plant food or soil fertility—the available, in soluble form, and the unavailable in mineral and vegetable form.

NATURAL FERTILITY.

The intermountain soils are more consistent in the deposits of natural fertility. Soils of volcanic origin contain generous natural deposits of mineral plant food. Moisture and air are necessary to liberate mineral elements that produce plant food. The decomposition of vegetation develops acidity that breaks down the mineral form and renders these elements available to plant growth and also leaves them in a soluble form subject to dissipation through erosion or drainage. In arid districts, lack of rainfall has left these mineral deposits locked up and unused and not dissipated in any way.

In the glacial soils in the older states, much of the virgin natural fertility became available throughout many years prior to the coming of the white man. Much of this fertility produced rich, luxuriant grasses that fed the buffalo, and later the range herds. The unused crops rotted. The decomposition generated acids that hastened the release of mineral elements, which, supplemented with decayed organic matter, produced a ranker succeeding wild crop. The heavy rains dissipated much of this fertility. Erosion enriched the lowlands at the expense of the rolling lands.

In the intermountain arid soils, for lack of rainfall, there has been but little growth, and almost no erosion. When water is applied, the high lands are equally as productive as the low levels. Students of agricultural economics conclude that a prophetic wisdom has kept this vast area of land with such liberal quantities of natural plant food locked up all these centuries and now is ready to release them for the use of mainkind when the world's food problem has developed in the acute stage. Idaho is capable of producing a sufficient amount of wheat to feed the entire population of the United States for a period of thirty days. At our present rate of development, this production will be attained in about six years.

Analyses of the soils in the famous Palouse wheat district of north Idaho show that there are sufficient mineral deposits in the surface foot of soils to produce forty-bushels-per-acre crops for 1020 years. The limiting factor is nitrogen. Nitrogen and humus are the cheapest and most rapidly supplied elements for crop building. Most of the dry farm regions of Idaho have sufficient natural mineral deposits in the top foot of soil to produce 350 forty-bushels-per-acre crops of wheat. The irrigated lands have sufficient natural mineral deposits in the top twelve inches of soil to produce 300 forty-bushels-per-acre crops of wheat. There is no good excuse for dissipating this fertility. It is commonly known that plants feed from a depth much greater than twelve inches. Alfalfa and other crops drive their roots to great depths. When the crops are plowed the roots decay. This decomposed vegetable matter furnishes humus. Humus is therefore deposited not merely in the surface soil, but at great depths. Humus increases the moisture holding capacity of the soil and promotes bacterial development. A soil rich in humus is easily aerated. Air and moisture are let down to greater depths. Excessive moisture soon passes to the lower soil or subsoil. Capillarity is readily established and promptly supplies moisture to the surface when the growing crop needs it. Heat is a factor in the growth of all crops. Excessive moisture interferes with heat distribution in the soil. Active organic matter furnishes life to the soil and also furnishes a medium for the growth and development of necessary minute bacterial life. Acids are formed through the decomposition of vegetable matter which set free the plant food contained within the minerals. Plant food can be taken up only in the form of *film moisture*—not chunks, lumps or liquids. In the humid states, much soil fertility is carried away in liquid form through surface drains and tile drains. This loss cannot be avoided

where copious rains occur. When the drouth occurs, plant growth is checked and the crop is stunted or entirely lost. This is caused not merely for the lack of the value of moisture to keep crops growing, but also for lack of moisture to *set free insoluble plant food* that may be needed to properly develop the crop.

It is easily understood why the control of moisture means control of crops, and therefore, irrigated crops are certain crops. Then, too, in the non-irrigated inter-mountain districts there are extremely few inopportune copious rains. The precipitation is constant, as shown by the records covering many years. By systematically storing the moisture by tillage methods that prevent loss through evaporation, the growing crop is supplied with minimum crop needs and there is no loss of plant food through dissipation. The character of the soil and climate has much to do in the regulation and distribution of moisture and plant food, heat, growth and development.

IDAHO CROPS ARE CERTAIN.

When the 1911 prolonged drouth period gave practically all of the states east of the Rockies a short crop of hay, Idaho responded by shipping thousands of tons of bright, high-quality alfalfa hay. One small district shipped 6,000 cars. This hay reached all middle west and eastern states. The eastern feeders discovered in this hay a superior quality. A soil naturally rich in mineral elements produces grains, grasses and forage rich in important bone and muscle forming material. The eastern feeder discovered that a ton of Idaho alfalfa hay furnished about the same amount of protein that was contained in a ton of bran. Then, too, Idaho alfalfa differed from eastern grown alfalfa. The highest feeding value in the alfalfa plant is found in the foliage. In the humid regions fungi often develops and sacrifices much of the lower foliage. Rains, or even slight showers at harvest time, discolor and otherwise discount the value of alfalfa hay. In Idaho the dry atmosphere interferes with the development of fungi spores. Fungi thrives in a moisture laden atmosphere. Lack of rainfall is, therefore, responsible for bright, clean, healthy growth and ideal conditions for harvesting and curing the hay. Many dairymen who bought this alfalfa hay at $18.00 to $26.00 per ton in eastern states have investigated and find that it cost less than $5.00 a ton to grow this hay and put it in the stack. The result is that many dairymen have brought their families and their herds to Idaho, where the superior feed is produced so cheaply.

The same drouthy conditions gave a short crop of potatoes. It was also discovered that the entire world had a 1911 wheat shortage amounting to 173,000,000 bushels. Bread and potatoes are two important articles of daily diet. The world's digestive organs appear to behave badly when either of these foods are lacking. Notwithstanding the fact that Idaho shipped many thousand carloads of potatoes, the United States imported many million bushels from abroad to supply the shortage.

Millions of bushels of Idaho grown wheat entered new markets and established new standards for milling quality of wheat.

Analyses of Idaho dry farm wheat rarely show less than 15% gluten content. The standard commonly recognized for light bread purposes requires but 12%. Then, too, the gluten is of excellent quality. The total annual precipitation where the wheats which show the highest quality of gluten are grown average less than 15 inches. This rainfall is so distributed that there is only a moderate straw and leaf growth, but it is clean, healthy and free from rust. The energy of the plant is largely directed into grain production.

Gluten is a sticky substance that must be present in all good light bread flours. Gluten is tenacious. The action of the yeast upon the carbohydrates in the dough generates carbonic acid gas. The gas causes the dought-cells to enlarge. This action causes the bread to "rise." The commercial bread baker must have not only a given weight for his loaf of bread but must also have "expansion" or "size" of loaf. The tenacious quality of gluten in the wheat largely governs these qualities. The spring sown Bluestem wheat formerly grown in the middle northwest states furnished the great mills at Minneapolis with a quality of choice gluten that gave that great milling center a world-wide reputation and market for superior light bread flour. Times have changed. Soil fertility has changed. Phosphorus that was once present in those soils is now gone. Declining phosphorus promptly gives a decline in yield or quality of wheat. Bluestem no longer yields the same quantity of wheat or quality of light bread flour. Idaho soil is prodigal in its wealth of phosphorus. Inexhaustible mountains of rock phosphate in Idaho are ready to supply the commercial world. Practically all intermountain soil is naturally rich in this element that is so rapidly disappearing from the soils in the older states. Idaho will continue to supply the great mills with a blending wheat that will allow them to continue to feed the hungry world with a superior light bread. The responsibility is recognized and it will not be ignored. Idaho soils will build profitable crops of superior wheat for centuries yet to come.

In the districts where precipitation is greater, a very fine quality of straight milling wheat is grown. The yield per acre is greater than in the dry farming

districts. Under irrigation wheat yields heavily. The soft wheats, rich in carbohydrates, are chiefly grown. This wheat produces a flour especially suited for pastry, biscuits and cracker purposes. This wheat also produces an excellent light bread flour when blended with a hard gluten wheat. In growing all of these crops for special purposes, the control of moisture is a fundamental factor. It is closely associated with well regulated and conserved soil fertility. Regulated moisture and soil fertility really grip the comfort and welfare of the entire nation.

A SEQUEL TO HIGH PRICES.

Until a few years ago, many agricultural crops, which means foodstuffs, were marketed at a price below cost of production. This caused large numbers of farmers to leave the country and move to town and engage in occupations that yielded a better living for them and their families. The census figures tell a story that plainly shows the tremendous growth of population in the cities and comparatively small growth of population in the farming districts—in some instances, a heavy loss in numbers, and not a few instances of abandoned farms.

Then came the era of short production and higher prices for nearly all farm products. Of late years, practically all farm products enter into the manufacture of human food, either directly or indirectly. Increased prices for farm crops has been a factor in the increased cost of living. Short help created a very large demand for improved machinery and farm power to handle the enlarged farm with less help. Implement factories operated double shifts to keep up with orders.

Better prices for farm crops gave the business of farming a new impetus. This new agricultural wealth enhanced the value of farm lands and also created a wonderful market for nearly all kinds of manufactured products. The cities and towns have had a great growth. Public spirited organizations have promoted public comforts, conveniences and amusements for the city people. The country districts have been neglected. In many of the older agricultural states neighbors are now fewer and farther apart; school enrollment is less; churches abandoned; soil fertility has declined and thousands of young people from the farms have become a part of the cities' industrial life. The pendulum has swung far. *The growth of the consuming population has far outgrown the population that must produce the crops.*

Thousands have considered returning to farm life, but they have become enamored of the cities' thrills and pleasures, and gaiety, and excitement, and are loath to exchange again. *Consumption has overtaken production.* It is extremely doubtful if crop production will ever again allow a price-lowering surplus to accumulate.

Parents who acquire a good farm home upon productive soil will have a heritage for their family that will be both wholesome and satisfying. Farming will always be a profitable occupation for those who know how and are willing to apply themselves. Those who have never "bridled a horse" had better think twice before attempting general farming. The inexperienced man may occasionally succeed upon a large farm, but he will likely find a small poultry or fruit ranch more to his liking.

Successful farming today means a constant "know-how" guidance. Skill and energy have superceded luck and indifference. The successful farmer today, in any state, needs to know how to sharpen his pencil and figure production cost, relative values in breeds, varieties, quality and markets. The trained business man possesses a helpful equipment that often causes him to succeed as a farmer, even with a lack of general farm knowledge.

Many lines of specialized farming are yielding very profitable incomes. The untrained farmer will more likely succeed along specialized lines. The "back to the farm" movement has prompted many who have had absolutely no farm training to leave salaried positions and undertake farming for themselves. With many, disappointment, grief, and real want have entirely obliterated their golden goal of health, happiness and prosperity. A degree of financial success must accompany all effort or happiness, which should be a part of all human effort, will be as elusive as the end of the bright rainbow. Owing to the wide range of altitude, latitude, soil types, rainfall, climatic and seasonal influence, there is a wide range of specialized vocations in Idaho that deserve to appeal to the thoughtful reader.

Idaho has entered a "New Era." This "New Era" is closely associated with "The Dawn of Plenty." There is inspiration in the development of heretofore unproductive land and causing it to respond to the needs of hungry markets. Idaho and her sister states are thoroughly alive to the economic problems that must be met in order to feed and clothe and house and comfortably care for our rapidly increasing millions. In meeting these demands, the people of this commonwealth in 1912 produced surplus crops from the farms, ranges, forests and mines that amounted to more than $100,000,000.

This amounted to about $300 per capita population; an average of five to the family indicates a distribution amounting to $1,500 per family. Yes, verily, the wealth of Idaho is widely distributed.

EXCURSIONISTS ON THE ST. JOE.

"See America First"—Begin with Idaho.

EXCURSIONISTS ON THE ST. JOE.

A boat trip always offers a restful and refreshing outing.

There is a degree of delightful exhilaration upon the cool mountain rivers, streams and lakes that cannot be experienced upon the more placid and roiled streams where erosion has carried the soil miles and miles away where it disturbs the fish.

The melting snow waters come dashing down the mountain sides and are thoroughly aerated and purified as they plunge from one cascade to the next and then finally form a great, blue, clear, lake or stream.

A new vista is presented at each turn of the winding stream.

The birches that overhang the streams unfurl delicately veined and beautifully variegated dark green foliage which drapes from willowy limbs and the white bodies of the birch, which, at first, suggests a ghost-like awe, becomes a welcoming host that offers a cool and tempting retreat.

The boat's whistle blasts echo and re-echo far down the canyon or out to the mountain tops and finally soften and blend with a symphony of joyous voices of happy excursionists who appreciate such beautiful scenery and invigorating air.

The birds call out a cheerful greeting from yon tree-top and the squirrels scamper to a safe retreat and then chatter in a scolding way.

The wild fowl that regularly nest in the seclusion of the wild rice and growth on the islands are greatly disturbed by the splashing of the waters by the passing boat and the merry laughter of the unwelcome visitors.

The agonized call of the mother birds cause the fledglings to mount on untried wings and soon find fancied safety among the reeds beyond. They do not realize that the game laws offer a protection that means safety in fact.

The short blast of the whistle announces a landing. The crowds upon the deck anxiously await the lowering of the gangplank. An hour's fishing furnishes a delicious supplement to the already well filled lunch baskets. Everyone is surprised at their capacity. Neighboring joys are freely shared, and in the future, neighboring sorrows and troubles are also shared as one great responsive, sympathetic brotherhood.

Those who best know and most fully appreciate the generous beauty and grandeur of nature's out-door creation, are best prepared to live helpful lives full of unselfish service.

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Live Stock in Idaho

By E. J. Iddings
Professor of Animal Husbandry
University of Idaho.

NO COUNTRY has ever made a long continued success of its agriculture without the use of live stock either directly or indirectly in connection with farm practice. The wonderfully productive power of the small farms of Holland and Belgium is not due to natural soil fertility, for many of these farms are built on sands reclaimed from the sea. It is due, however, to long and patient use of the dairy cow and of hogs to consume the products of the farm and at the same time produce manure to build up and store fertility. In a similar manner, England, the home of by far the greater number of our improved breeds of animals, has put her lands in a high state of fertility in the years that her people have handled and developed those breeds.

REASONS FROM ABROAD

On the other hand, those sections of America that have followed the single crop and no live stock system, such as parts of New England, the Red River Valley of the Dakotas, and large portions of California, although possessed at one time of wonderfully rich soils, have almost been eliminated from the area of lands held as adapted to crop production. Any state or nation with natural advantages for live stock production has in those factors the first and most important item in successful, profitable and long-continued agricultural practice.

AMERICAN EXPERIENCE

By the use of live stock farm products are marketed more cheaply and in a much more concentrated form, and with a loss of only from one-tenth to one-fifth of the fertilizing value of the crops consumed. Furthermore, the use of live stock makes possible the marketing of crops at a higher average price, more evenly distributes farm labor through the year, reduces and eliminates wastes, and gives a permanence and stability to the farm and its profitable cultivation, secured in no other way.

ADVANTAGES OF LIVE STOCK

THINGS TO BE CONSIDERED.

Agricultural sections differ widely in advantages offered to the live stock man. Pasture and forage conditions are far from uniform, the cost of production varies, costly shelter may or may not be necessary, environmental conditions may or may not favor existence and spread of disease. In brief, the things that have almost entirely to do with success or failure in live stock production are soil, pasture conditions, climate, water supply, feeds and markets.

SIX ESSENTIALS

SOILS.

In Bulletin 68 of the Idaho Experiment Station, Chemist J. S. Jones, in summarizing his conclusions after extensive investigation, states: "As a rule, the soils of the state are rich in all of the mineral elements required in plant growth." Sufficiency of mineral matter in the soil is important to the breeder of live stock for several reasons. It insures large average yields of grain, and forage and plentiful feed for animals, it means a higher mineral content of grasses, hays and grains, and hence, a much greater value from these feeds in growing hardy animals of strong bone and tendon, and soils rich in mineral and gritty material helps develop wearing qualities in hoofs of draft animals.

MINERAL MATTER ABUNDANT

Not only are the soils rich in mineral matter, but in addition all the elements of fertility are abundant, and in a form highly available for the use of the plant. Enormous yields are the result. Maximum yields not at all uncommon are 50 to 60 bushels of wheat, 50 to 70 of barley, 80 to 110 of oats, 4 to 7 tons of alfalfa hay, and other crops in proportion. Corn is not a staple crop, and on account of abundance of other feeds, is not seriously needed. In many sections, however, this

NATURAL FERTILITY HIGH

King of the Mississippi Valley states grows well, viz: The Payette Valley and the Twin Falls vicinity, where a yield of 110 bushels per acre has been secured. Some sections of the state, notably the Palouse country in northern Idaho, have been growing wheat for 20 to 30 years without serious attempts at rotation. This practice is now fast giving way to mixed farming and live stock production, but heavy yields on the wheat farms after years of single cropping attest strongly as to original and natural soil fertility.

SOILS RANK HIGH

The most common soil deficiencies found by Professor Jones were lack of nitrogen and humus. The former is easily and cheaply supplied by the use of legume crops. The legumes should be fed to animals and the manure returned to the soil, which is also an easy manner of supplying humus or organic matter. Properly developed and conserved by wise use of live stock in connection with chop rotations, there is no question but that the soils of Idaho will equal those of any state in America.

THE MOST PROFITABLE AUTO IN THE WEST.

A wealth of beauty, grace and symmetry. A power greater than a six-cylinder and faithful beyond comparison with mechanical power. Fidelity, kindness and intelligence almost human. Service such as the world at large can never dispense with. Demand never before equalled and at prices more profitable than ever. The horse has been man's constant companion throughout the centuries of civilized history. He shares pioneer hardships and develops prosperity.

PASTURES.

IDAHO RANGES NOTED

For many years the great plains, valley and mountain pastures of Idaho have carried great bands of horses, sheep and cattle, and have been an important source of income. In the more open or plains sections the spring season opens early and grasses flourish until the hot, dry summer months. Then the herds are moved to the mountain valleys and sloping hillsides, where rains are more frequent, and where, in many cases, the pastures are refreshed by springs that wind away from banks of eternal snow.

It is the popular idea that all of this has been changed and that the range herds and flocks are almost a thing of the past. It is true that nearly four million acres of the state's semi-arid plains, benches and valleys are included in irrigation projects either completed or under way, that great productive dry farms have been carved out of the former domain of the sheepman and cattle man, and that many of the valleys have been found to have enough natural rainfall to insure successful cropping. In spite of this inroad of the settlers, who have carved out 1,334 farms per year for the last ten years, the grazing area is still of tremendous extent. The last census figures show that after all farming lands have been considered, they embrace only 9.9% of the total area of the state, which is approximately 53,346,560 acres, and leave approximately nine-tenths in forest, mineral and grazing lands. The range herds of smaller size, better cared for, carrying more improved blood lines, and marketed in better finish and at earlier ages, will continue of great importance. Free range and forest reserve privileges near the valley and other farming lands of nearly every part of the state, will enable the farmer to carry a considerable number of domestic animals on the cheap summer pasture, winter them on roughage grown on the farm, and finish them on home grown grains and hays, finding in the animals a home market for the product of his soils.

NINE-TENTHS OF STATE NOT NOW CULTIVATED

TAME PASTURES EASILY GROWN

Tame pastures and pasture mixtures can be grown successfully in nearly every section of the state. In no way is soil productivity so economically garnered as by use of pastures for carrying well bred and growthy animals.

CLIMATE.

CLIMATE IMPORTANT

One of the first inquiries made by the prospective settler both from considerations as to the health and comfort of his family, and cheapness and ease of handling his farm animals, is regarding climate. A conservative and authoritative statement by Edward L. Wells, Section Director, U. S. Weather Bureau, Boise, Idaho, follows:

"The State, lying as it does on the western slope of the Continental Divide, is open to the moderating influences of the winds from the Pacific ocean, and is protected by the main ranges of the Rockies, and by such ranges as the Cœur d'Alenes and the Bitter Roots, from the cold waves that sometimes prevail further east. Local Chinook winds also play an important part in rendering the climate milder than that experienced in the same latitude east of the Divide. Idaho, in common with the Pacific coast region, is comparatively free from thunderstorms, while tornadoes are almost unheard of. High winds sometimes occur on the open plains, but in the sheltered valleys the winds are comparatively light. During the winter there is considerable cloudiness, and in some of the valleys fog is not infrequently experienced, but in summer, particularly in the southwestern part of the state, the sunshine is almost uninterrupted by cloudiness for days at a time. At Boise, in August, 1912, there were thirty-one days clear, with ninety-eight per cent of the possible amount of sunshine."

OFFICIAL INFORMATION

In the temperate zone with neither extremes of heat or cold, domestic animals have reached their highest development. The summer heat is necessary to grow feedstuffs. Plentiful sunshine is necessary to plant growth, and healthy, rapid growth in animals. Furthermore, sunshine, abundant in nearly every portion of the state, is a powerful disinfectant, keeping down dangerous bacterial growth, and aiding in handling farm animals in a sanitary manner. The extremes of winter and summer are not great, which is a positive advantage.

SUNSHINE IMPORTANT

Comparatively mild winters in most sections of the state render expensive barns and shelter unnecessary. (It is true, of course, that the tendency in a great many parts of the west is to give too little care, attention and protection to live stock. Those farmers, however, who come from northern latitudes of the Ohio, Missouri and Mississippi Valley states, and are accustomed to huge, carefully constructed barns, are surprised to find how easily ample protection can be given their

EXPENSIVE SHELTER NOT NEEDED

animals). Hogs can be kept over winter in colony houses in both north and south Idaho. Young horses need in many cases no more protection than an open shed with tight wall facing the prevailing winter winds. Bands of sheep are taken to warm valleys and fed in the open. In some parts of Idaho, experienced and careful dairymen, in constructing dairy barns, plan them only for holding cattle while milking, preferring that the cows spend the nights in the open air or under sheds.

THRIFTY ANIMALS GROWN CHEAPLY

In general, a medium average altitude, spare rainfall, absence of extremes of heat and cold, and abundant sunshine, cheapen cost of housing, make for health and natural sanitation, and promote growth of bone, muscle and lung power in domestic animals. Such environmental conditions should appeal strongly to the homeseeker who knows and likes the live stock business.

WATER SUPPLY.

GOOD WATER EASILY OBTAINED

Experienced live stock men maintain that pure water is essential to successful live stock production. Wells, springs, and swift flowing rivers supply domestic water for the farming population of Idaho. On many farms running water is found in yards and pastures. Drainage slopes are such that water does not become stagnant and encourage disease. When running water is not found, dug or drilled wells sunk to a depth of from 10 to 200 feet, yield ample supplies of cool, pure soft water. The writer knows of no state where good drinking water, free from alkaline salts, is found so easily and so abundantly for both men and animals.

FEEDS.

HEAVY YIELDS OF HIGH QUALITY GRAINS

The feeding stuffs of Idaho are of uniformly high quality. In fact, it is hard to convince those coming from older eastern states as to yields and quality of grains and hays in our state except by field demonstrations. Oats yield heavily, as before indicated, are high in mineral matter and in percentage of grain to hull, and weigh 36 to 50 pounds per measured bushel. This native grown oat is a wonderfully fine feed for almost all kinds of live stock. Barley is heavy yielding and rich in bone and muscle building material. Wheat yields abundantly and makes rapid and economical gains in feeding hogs, cattle and sheep. Corn is grown in some sections. Rye, speltz, and in fact, practically all cereal crops give both yield and quality.

Live stock men of the Mississippi Valley states, when exhibiting at northwestern and coast fairs and shows, have been known to complain that corn belt herds did not have an equal chance when competing with equally as good animals bred in the northwest and fatted on feeds of such quality as are grown here.

WONDERFUL FORAGE CROPS

One of the greatest inducements offered the live stock men by Idaho agricultural conditions, are heavy yields of high quality of forage and hay crops. These feeds used both for hay and pasture, cheapen cost of production. Alfalfa will grow in nearly every section of the state, but does best in Snake River Valley, Boise Valley, and other irrigated districts. In those sections it grows very rapidly, producing two or three crops, yielding three to seven tons per acre, has a high percentage of leaf to stem, and in the semi-arid climate is cured with little bleaching and discoloration. As a winter feed for horses, cattle, sheep and hogs, and as a roughage for producing milk, and fattening all other kinds of animals, no other plant equals the alfalfa. In summer it will, with proper balance of other feeds, produce from 500 to 800 pounds of pork per acre, and mixed with other grasses can be used to pasture horses, cattle and sheep.

SPLENDID FIELD FOR THE FEEDER

In North Idaho, and other sections not so well adapted to alfalfa, clover serves the above-mentioned purposes. Animals fed alfalfa or clover, with grain in addition when needed, grow rapidly with plenty of bone and muscular development. Thousands of tons of alfalfa were shipped from the newer irrigated sections of South Idaho last year. It went as far east as Pennsylvania, where dairymen bought it, paying as high as $26.00 per ton and using it in milk production. So bright, clean and fine was the alfalfa sent to Kansas City, that a higher market grade than before used, "extra fancy" was established for the Idaho product. Vetches, field peas, timothy, rape, kale, root crops,—all yielding heavily and distinguished for a quality peculiar to the semi-arid regions, added to the feeds mentioned above, make feeding conditions unusually attractive for producers of live stock and live stock products.

MARKETS.

PACIFIC COAST AND HOME MARKETS

Idaho is a large state and is not threaded with railroads as are some of the older states. For that reason bulky crops are not marketed so advantageously, when sold directly from the farm, as when sold in their concentrated form through animals. For horses, the market in the great Pacific coast cities which need drafters for heavy hauling, and frequently ship them at great expense from eastern states because the northwest does not now breed draft horses in sufficient numbers to supply the home demand. Cattle find markets from Chicago to the Pacific coast. For both hogs and cattle, Portland makes a strong bid, is now offering good prices and other inducements toward increased live stock production. Cities of the state, i. e., Boise, Gooding, Twin Falls, Pocatello, Idaho Falls, Lewiston and Moscow, have small, but modernly equipped packing plants, and during portions of the year are in the market for more animals than stockmen can supply. Idaho sheep and lambs are sought by the professional feeders of Colorado and other states at figures that make production worth while to the range man.

PROMISING FUTURE.

Combination of fertile soil, quick growing pastures, suitable climate, pure water supply, large yields of feeds and satisfactory markets seem to assure for the state a wonderful future as a live stock producing center.

HORSE PRODUCTION.

MARVELOUS INCREASE IN HORSE VALUES

In recent years the end of the horse has been predicted many times. During the last ten years automobiles and motor trucks have come into wide use, and the horseless age has been thought to be near at hand. Increase in horse values contradicts this view. During the decade 1890-99 horses averaged $48.24 per head; during the ten years 1900 to 1909 this valuation increased to $71.99 per head; January 1, 1912, horses were valued at $105.94 per head. These figures take into account all kinds and classes of horses. The field for light horses has certainly been narrowed and census figures for drafters alone would undoubtedly show a much more remarkable increase.

THINGS THAT MAKE FOR SPEED AND QUALITY

Let us see what kind of horses are wanted, and what conditions aid most in production. The two great divisions of horses commonly recognized are light and heavy—warm-blooded and cold-blooded. The former division includes such breeds as the thoroughbred American trotter and pacer, saddlers, coachers, and all sorts of driving horses, all tracing more or less directly to the Arabian, through the English Thoroughbred. The Arabian comes from the plains of Arabia; a country near the sea-level, but arid and largely desert, in many ways resembling the semi-arid regions of western United States. In these hot desert lands the horse with soft feet soon perished, and those with tough feet survived to beget other horses of similar tendency. Long distances to be traversed over the desert in order to obtain food and drink demanded endurance, hard, flinty bone, tough tendons, strong muscles, and nerve force sufficient to drive a body possessing these characteristics. Horses lacking in these things died by the wayside

AMORITA, GRAND CHAMPION PERCHERON MARE OF INTERNATIONAL LIVE STOCK SHOW OF 1909.

Amorita is now owned by the University of Idaho and is kept there to be used in students' stock judging and on demonstration trains to illustrate to the farmers of Idaho the ideal type of her breed. She is undoubtedly one of the very best mares owned anywhere in America.

generation after generation, until the tough enduring kind became the only one. Thus the stream of light horse blood, carrying the best things in that great division of the horse family, has come down to us through the centuries from the burning sands of Arabia. The influence of surrounding conditions has been in a large measure the determining factor.

Our heavy horse breeds are the Percheron, Shire, Belgian, Clydesdale and the Suffolk Punch. The Belgian is descended directly from the coarse, heavy horses of northern Europe, particularly Flanders. Careful inquiry shows that each of the other four draft breeds owe size of body and bone and drafty conformation largely, if not almost entirely, to the introduction at some period in the history of the breed of the cold blood from Flanders. This old home of the heavy horse was different from that of the Arabian. The Flemish country had low flat, rich soil, instead of dry, rolling plains covered with hot sands. The feed in the former region was coarse, and both feed and water abundant and near at hand; while in the latter region the texture of grains was fine and hard and long distances must be traversed for feed and drink. The ancestors of our drafters, therefore, were not selected for endurance and speed and hardness of bone and tissue because such qualities not only were not needed, but would have been a positive disadvantage. The Flemish horse became, therefore, a heavy, blocky, coarse, heavy-boned, coarse-haired and flat footed animal, and from him has come through the centuries our modern drafter.

CONDITIONS THAT BRING WEIGHT AND SUBSTANCE

The draft horse is unquestionably the farmer's horse of today. The market demand, however, is not for the same kind of horse as was characteristic of the remote ancestry of the breeds. Mere size and accompanying roughness of outline is no longer demanded or wanted. Weight is, of course, the first consideration in the modern drafter, and size and bone is also essential, but many other things must accompany scale of body and bone. The legs must be set squarely under the body, the bone must have quality or hardness, smoothness and denseness as well as size; the feet must be well shaped and have wearing qualities; the body should be neatly turned, the hair on body and legs not long and coarse, and considerable action, life and vitality are demanded.

THE MODERN DRAFTER

Size and growthiness come from ancestry, feed and good treatment; endurance, toughness of bone, muscle, sinew and feet come from ancestry, soil, altitude, climate and quality of feed. Action and spirit are both ancestral and environmental.

WHERE GOOD POINTS OF HORSE COME FROM

There exists in Idaho a combination wonderfully well fitted to produce the drafter for today. Our great areas of alfalfa and wonderful barleys, oats, and other grains make the necessary growth possible; the high protein and mineral content of the same feed makes for development to an unusual degree of bone, muscle and tendon. Our gritty soils wear away hoofs rapidly, causing rapid replacement and development of wearing qualities. Our altitudes mean for lung power in colts, our vast native pastures and big farms give plenty of room for exercise. In other words, we have feeds in abundance, such abundance of forage as prevailed in the early days of the drafter's history, and in addition, have many of those characteristics of the eastern home of light horses that stand for quality in horse-flesh.

IDAHO FITTED TO PRODUCE IDEAL DRAFTER

The combination of size, balance and quality make for draft horses of the kind that the market cannot now obtain in sufficient number. Chicago pays from $200 to $350 for draft horses, and for an outstanding individual occasionally goes better than $500. Last year only 5% of the horses sold in Chicago were large enough and sound enough to meet the higher draft classification. The northwest wants drafters for city use, for hauling heavy loads on the farm and in the logging camps and for hauling the heavy improved machinery of the farm. Draft horses are needed so badly that the coast markets have purchased them at long prices in markets 2,000 miles distant and have paid the accompanying freight bills in addition.

GOOD DRAFTERS WANTED

In 1900 the horses and colts of Idaho were valued at $4,123,343. In June, 1910, there were in Idaho 197,772 horses and colts and 4,036 mules. The last census figures show a value of horses and colts of $19,832,423, or nearly five times the valuation of 10 years before. This indicates a marvelous growth and development of the industry.

GREAT INCREASE

The mares of the state average light in weight but high in quality. Many

excellent draft stallions have been introduced in recent years. The blood of these heavy stallions is giving more size and substance to our young horses, and, consequently, enhancing their value for draft purposes. Light horses grown in Idaho, if from the right kind of foundation stock, are found speedy, wiry of muscle and tendon, flinty boned and possessed of tough, long-wearing feet. In fact, good horses of all kinds are now produced in widespread districts of the state, but as an industry, considering abundance of pasture, feeds and other advantageous conditions, horse breeding is in its infancy. There is ample and an enticing field for the newcomer.

FIELD FOR GREAT HORSE BREEDING INDUSTRY

BEEF PRODUCTION.

In no branch of the live stock industry is there so great need of extension as in that of beef production. Years ago when the great free ranges were first filled with cattle, the range stuff produced at low cost discouraged the beef cattle man on the farm. As a result, a large per cent of the farmer breeders quit the business and our chief dependence for beef came to be on the supplies from the big pastures and free ranges of the west. The farmer has been having his turn and for the last ten years has been invading and plowing up the great ranges and has made very serious inroads into that phase of beef making. With the source of supply limited from both farm and range, we find that while our population has increased 21% in the last decade, the number of beef cattle has decreased 7%. Another unfortunate feature is that the last five years have seen an unprecedented slaughter of calves for veal. All of these things have brought us to the 10-cent steer. Grain fed beef cattle are selling in the eastern cities for from $8.50 to $10.50 per hundredweight. Range and grass fed stuff has, in the last few weeks, brought $9.00 at the Missouri River and Chicago markets, and in the judgment of well informed and conservative beef men, the upper limit has not yet been reached.

BEEF SHORTAGE

CALVES SLAUGHTERED

PRICES SOAR

With hogs, and in a certain measure with sheep, a deficiency in marketable stock can be met in a comparatively short time by increased operations of breeders. Cattle, on the other hand, grow slower, reproduce less rapidly and abundantly, and require more room and feed for each individual. For these reasons it is highly improbable that, even if all our present supply of breeding animals could be used for reproducing their kind and rebuilding our beef herds, supply would overtake demand in the next 10 or 15 years. The market and prices for beef cattle are practically certain to be good for several years to come.

IMPOSSIBLE TO SOON MEET SHORTAGE

For successful breeding and for satisfactory net profits from finished animals, the beef producer needs medium priced land, a temperate climate where great expense need not be incurred for protection from storms, as much cheap pasture as possible, abundant roughage for winter use, and grains for finishing to meet demands of highest market classifications.

CONDITIONS NEEDED

THE POPULAR WHITE-FACE

Clifton, one of the most perfect types of three-year-old steer ever seen in the west. Fed and finished by the University of Idaho and sold for 50c per pound.

LAND PRICES REASONABLE

The larger portion of the lands of Idaho are not fruit lands and are not high priced. Irrigated lands can be bought at from $50 to $125 per acre, dry farm lands at from $15 to $50, and land where rainfall is sufficient without much attention to dry-farming methods, at from $30 to $100 per acre. Cut-over lands in Kootenai, Bonner, and neighboring counties possessed of wonderful possibilities for crop production, can be had for from $10 to $60 per acre. These prices are within the reach of a large portion of homeseekers and give most substantial returns when used for combined grain, hay, pasture and live stock farming.

GRAZING LANDS STILL ABUNDANT

On such lands there is a splendid field for the beef man. In many cases free range or forest reserve grasses can be secured near the farms. Large portions of central Idaho will always consist of private and government owned or controlled grazing lands, adapted to the cheap growing of high grade beef cattle. In the slashings and neighboring hills is a great deal of range that can be pastured in connection with beef cattle on the farms in the cut-over sections. The grains and hays grown in the magnificent farming districts near and surrounding these grazing districts, are adapted to wintering the steers and finishing them into beef.

PROFIT IN QUICK MATURING CATTLE

Within recent years our beef making industry has been revolutionized. The former practice was to stock the ranges to the limit of their carrying capacity and keep the steers on the range until from 3 to 5 years of age and sell them from grass, weighing from 1,300 to 1,600 pounds. The pasture cost nothing, handling charges were reasonable, and while it took a long time to grow a marketable steer, the low cost of production seemed to jurtify the methods used. The ranges have been reduced so that there is no longer room for the older steers; the higher appreciation of pastures has seemed to justify use of better blood and breeding of quicker maturing kinds; expert knowledge of beef making has convinced a large portion of the range breeders that it does not pay to withhold feed so that the calf loses its baby fat; the modern market doesn't want the 4 or 5 year old heavy steer, but demands a younger animal, 18 to 24 months of age, weighing 1,000 to 1,200 pounds.

FARM FEEDS NOW NEEDED

The popularity of light-weight, quickly-grown cattle demands better breeding, better feeding in winter, and much wider use of the farm and of farm grown feeds.

FEEDER AND FINISHER COMBINED

In past years the western states have produced mostly feeder cattle. The feeders were shipped to Missouri river or Chicago markets, and sometimes direct to cornbelt feeders. If sent to market, the cattle were bought by feeders, and shipped to the country to be marketed after a feeding period of from 3 to 7 months, with an extra set of transportation and commission charges. Between the price received by the grower and that by the feeder were extra shipping and selling charges, and the feeder's profit. It is only reasonable to inquire why the grower should not also be the feeder and finisher combined, and receive the ultimate market price.

Idaho at present finishes few cattle. Conditions are right for both breeding and finishing. Great quantities of alfalfa and other hays and forages are grown and can be used to keep the animals gaining rather than losing in winter, and these same forage crops along with such native grown grains as barley, oats, wheat and mill stuffs, can be used to put on the grain finish. Root crops are useful in beef making and yield abundantly in practically every part of the state. By-products, such as sugar beet pulp and molasses can be secured near the beet sugar factories and have been found cheap and efficient feeds for beef cattle. The show steers at the University are now eating oats, corn, alfalfa meal and molasses, mangles and alfalfa hay, all Idaho grown, except the corn, which is imported. On this ration they have been gaining 3 to 5 pounds daily.

FREEDOM FROM DISEASE

Tuberculosis is practically a negligible factor. Water supplies are abundant. Pasture is to be had on the range, and if not there, a native pasture will pay on medium priced land.

IMPORTANT INDUSTRY

In many sections of the state beef cattle are an important source of income. This is true in Indian Valley, Long Valley, in the Nez Perce and Camas Prairie country, Bear Lake, Custer and Lincoln counties, and in other sections of northern, central and southeastern Idaho. There are now in the state approximately 250,000 head of cattle listed as other than dairy cattle. There is room for twice as many. Range pasturing will be regulated so that more cattle will be fed in winter, thereby saving the range to carry more cattle in summer. The alfalfa and grain grower will find that he needs beef cattle to furnish him a market on his

BLACK BEAUTIES—WHERE THE HIGH GRADE SIRLOIN CUTS COME FROM.

The Angus converts Idaho blue grass and alfalfa into beef worth 10c per pound on the hoof. Notice the graduated size and age. Every animal has a pedigree running to the most fashionable strains of blood. Every animal in condition for a profitable market at any time in its growth. The number of range cattle is constantly decreasing, but the domestic bred and fed cattle are increasing. There will be no more cheap beef. Idaho farms will respond to the beef shortage and supply a liberal share of superior beef cattle.

farm for his alfalfa and all crops adapted to beef production and to save the greater portion of the fertilizing value of these crops in the form of manure.

The newcomer with knowledge of the beef business will see the wonderful possibilities here for putting the industry on a profitable basis and will add to the state's beef herds.

NOW IS THE TIME

There is no better time to start with beef cattle than now. Public attention is being called to the beef shortage and cattle for breeding purposes will cost less this year than next. The University of Idaho, foreseeing the coming demand, has established within the last year the foundation of one of the best beef herds of the west. The herd consists of Shorthorn, Hereford and Aberdeen Angus. All are young cattle, calves, yearlings and two-year-olds. For a start on the farm yearling heifers are best. They cost comparatively little more than calves and little time is lost before they become productive and begin to return profit. Along with the foundation females of a herd, whether young or old, should go a good bull. Often there is not more than from $50 to $100 difference in cost between an ordinary sort of bull and a good one. The first crop of calves in an ordinary sized herd will pay this difference in increased thrift, earlier maturity and more valuable beef form. The best steer in the University of Idaho show herd is a cross-bred, out of a grade Jersey cow and by a very fine pure-bred Hereford bull. The splendid beef qualities of the bull were transmitted to the exclusion of the Jersey tendencies of the cow and the result is one of the best steers ever owned by the University.

BEEF CATTLE NEEDED

Idaho beef is wanted to feed America's increasing millions; the cattle are needed to consume, at a profit to the farmer, grasses, hays, forage crops, roots and grains, and the manure from Idaho fed steers will make even more valuable the state's productive soils.

DAIRYING.

The farmers of Idaho now appreciate the importance of the dairy industry to the state as is indicated by purchases of better cattle, building of silos, requests of the Experiment Station for advice on breeding, feeding and testing, and attendance at farmers' institutes and to the public meetings called to advance the dairy interests. In the last year 500 head of eastern bred dairy cattle have been brought into the irrigated portions of south Idaho. At a public sale held at the University barns, June 22, 1912, 101 head of high grade and pure bred

WIDE-SPREAD INTEREST IN DAIRYING

dairy cattle were sold at public auction and thus distributed over the northern part of the state. At this sale $335 was paid for a Holstein heifer and $400 for an imported Guernsey. The joint field man of the University and of the U. S. Department of Agriculture has built 15 silos during the summer, and the other dairy experts of the University have more calls to attend meetings, test herds, help buy cattle and advise in feeding and breeding than can be heeded.

AWAKENED APPRECIATION

This interest in dairying is due to awakened appreciation of the temperate Idaho climate without demand for elaborate barns, of freedom from tuberculosis and other infectious and destructive diseases, of pure water supply, of abundant and rich pastures, and of the high value of Idaho grains and hays for milk production. During the past year alfalfa hay was shipped from Idaho in large quantities and sold to eastern dairymen at from $18 to $26 per ton. A portion of the dairy products from the herds fed Idaho alfalfa was sold to western markets. Exportation of high quality hay and importation of butter indicates a big and profitable field for the Idaho dairyman.

FACTORS OF SUCCESS

Factors in successful dairying are the cow, her feed and the market for her products. The cows and bulls to build up the herds are being supplied, in nearly every case chosen by experts, from the best herds of the east.

Feeds are grown to supply many times the number of dairy cattle now in the

A part of the Arthur Budge herd of Holsteins. This herd and many other dairy herds in Bear Lake county are contributing in a liberal way toward establishing prosperity in a permanent way in southeastern Idaho.

The dam of the bull illustrated here has a record production of 22,559 lbs. of milk and 970.51 lbs. of butter in a single year.

Such splendid lines of blood will cause Idaho herds to be sought by dairymen searching for the best. There is no tubercular trouble to discount the profits upon Idaho dairy herds.

Cardinas Maggie, an imported Guernsey heifer, being sold at auction. She recently sold for $400. Many auction sales have distributed throughout Idaho some of the best dairy blood obtainable.

state. Everywhere in spring are rich pastures, in most sections by natural rainfall or irrigation, pastures are kept green during summer and until late in fall, and in the lower elevations of south Idaho winter pasture can be used. Alfalfa, clover and grain hays make excellent roughage. Oats, bran, barley, wheat and other grains are easily grown for grain feeds. To supply succulence, corn can be grown for silage in most parts of the state, and in addition thereto, root crops yield enormously.

IDAHO FEEDING CONDITIONS

At present there is market in Idaho for from 3 to 5 times as much butter and many times more cheese than is produced in the state. After the demands of farm, city, mill and mining consumer are met in Idaho, ample demand will be found in other parts of the northwest, and, particularly in the cities of Butte, Salt Lake, Spokane, Portland and Seattle.

MARKET UNLIMITED

More complete information concerning the possibilities for dairying in the state can be secured by addressing the State Commissioner of Immigration, Boise, or the Department of Dairying, Moscow.

SHEEP RAISING.

The range of Idaho is the field of operation for many prominent sheepmen, with holdings ranging from 3,000 to 50,000 head. These flocks in bands of from one thousand to three thousand are ranged over the plains, valleys, hills and mountains of central and southern Idaho. The snows are heavy in winter in the sheep country, and melting in spring saturate the soil for the vigorous growth of early grasses, and from the banks and drifts in the ravines send out trickling streams to sustain the vegetation in protected places during the hot, dry summer. The mountainous districts are with the National Forests under government control and are portioned out pro rata among the sheepmen for summer and fall use.

HOME OF GREAT RANGE FLOCKS

Two systems of wintering prevail. Some of the herders drive to protected valleys in the lower altitudes and buy alfalfa and native hay from the farmers. Others drive to the lower altitudes where the winters are mild and the snowfall light—winter grazing is available on the public domain.

METHODS OF WINTERING

As in most range sections the ewes comprising the breeding herds are of Merino blood. In some herds the size has been increased by Rambouillet and Cotswold crosses. In others, bucks from the Down breeds have been used until that blood predominates. Taking all the herds into consideration, however, there is no question as to the predominance of Spanish blood. This blood brings with it good rustling qualities, hardihood, dense fleeces that will not open to rain or snow and best of all the flocking instinct. The English breeds wander and scatter in grazing, covering a

NOTED GRAZING QUALITIES

wide area of range, are likely to be lost by the wayside in moving the bands, and when grazing apart from the herd are picked up by wolves and other four-footed enemies of the sheepman.

RANKS FIFTH

Such is the range industry of Idaho, which includes by far the greater number of the sheep of the state. In numbers of sheep the states rank as follows: Montana, Wyoming, Ohio, New Mexico and Idaho. Figures compiled for January 1, 1912, give Idaho 2,951,000 sheep of all kinds and ages.

The range industry is of direct interest to the farmers of the state in two ways. In the first place, those farmers with hay lands contiguous to sheep range,

BENEFITS THE FARMER

or so situated as to offer advantages to sheepmen for wintering, find a splendid market for hay and secure in addition, in many cases, the sheep manure, the most valuable of all animal manures. Secondly, a range sheep industry which annually grows thousands of lambs furnishes supplies near at hand for the Idaho feeder.

LAMB FEEDING

The lamb feeding industry is one that offers great advantages to the farmer. The professional feeders of Colorado found that lamb feeding meant increased yields and was not only beneficial but necessary to continued success with soil exhausting crops. Furthermore, the feeding operation furnished a home market for alfalfa hay and resulted in an increase in the farm value of that product from $2.00 to $3.00 per ton to $8.00 to $10.00 per ton. Richer lands, increased yields, and a home market for hay in 15 years doubled the price of farm lands.

The feeders of neighboring states, and of the corn belt, have for several years eagerly sought Idaho lambs. To the writer's knowledge on three different occasions

PRIZE WINNERS

lambs from this state have won the champion car-load prize at the Western Live Stock show in Denver in competition with lambs grown in nearly every state in the west. In January 1910 a car load of Idaho lambs both grown and fed near Soda Springs won the championship at the Denver show, and in December, 1910, a load of Idaho lambs brought from the ranges near Soda Sprnigs and finished in Illinois, won the grand champion car-load prize at the International Live Stock show at Chicago.

With lambs, wethers and ewes of such quality grown within the confines of the state and with alfalfa yielding heavily and having a farm value in so many districts of only $4.00 to $5.00 per ton ,there is wonderful opportunity for the feeder to work in Idaho. With lambs bought right and sold well, which means a selling price not less than 2 cents per pound above the purchase price, alfalfa hay can be made to return from $10.00 to $25.00 per ton. This is the experience of western feeders when the alfalfa is used along with corn. In those sections of the state where corn cannot be secured for one and one-quarter cents per pound or less, other grains should be used instead. Oats, field peas, barley and wheat are the most useful home grown grain crops for sheep and lamb feeding. Oats and peas should give results closely approching those secured with corn.

FEEDING PROFITS

For the newcomer to our State there is a field for activity in connection with the sheep industry. As range flockmasters come to see the advantage of less exposure and more feed in winter, more hay will be needed to winter the herds. In the alfalfa raising belts experienced feeders are needed to light the way and help feed at home thousands of splendid feeder lambs that are now finished in various states from Colorado to Michigan. Yet there is opportunity to work on the range. In a few portions of the state new flocks might succeed. The best field of endeavor in this connection, however, is in the introduction of improved methods of breeding and management. The range could be divided and conserved to graze more sheep, the ewes should be carefully selected to raise more, bigger and quicker maturing lambs. More shelter and more skill at lambing time would save thousands of lambs now lost. This feature of the industry alone may make or break the sheepman. Lambing percentages in Idaho are high, from 60% to 130%: the former unfortunate and probable, when lambing in the open in cold, wet weather, the latter extremely profitable and attained only with careful work in the shelter of the lambing shed.

FIELD FOR NEWCOMER

Important and worthy as is the range industry, the great development and extension of the future will be in another direction. The farm and the farmer need and will have sheep in small bands of from 20 to 100 head.

FARM FLOCKS

Sheep on the farm will consume nine-tenths of the varieties of weeds that grow, will clean up fence rows and vacant places, will trim bushes and troublesome shrubbery, consume a large part of the roughage of the farm to advantage, and return to the farmer a substantial profit upon everything eaten. In fact, a small band of sheep on the

average farm, whether in north or south Idaho, will make surprising returns in both mutton and wool, and their keep will hardly be missed.

PASTURE PROFITS

To show the possibilities in the way of profit from pasture, the experience of George V. Leighton in the Boise Valley with 30 acres of mixed pasture may be cited. This 30-acre pasture in May, 1911, carried 675 sheep and 175 lambs and remained in such condition as to assure pasture for this number of sheep for the remainder of the summer. Mr. Leighton received one cent per head per day for the pasture, which, figured for the entire number of sheep for a period of five months, gives an income of $42.50 per acre, secured without any expense for labor except that of irrigation.

EASY TO START

The starting of the farm flock need not be expensive. A bunch of grade ewes from the range can ordinarily be bought reasonably. Use of a good mutton bred ram, of one of the breeds that combines a good fleece with a well developed mutton form, rapidly improves the flock and makes it entirely creditable for farm use. A few years ago wool was the prime consideration in sheep breeding and the carcass was little used. Today mutton has gained widespread popularity as an article of human diet. Soaring prices of beef cattle will create a more extensive demand and bring better prices for mutton, and at the same time wool continues to bring a satisfactory price. Mutton and wool on the farm should have an important part in the agricultural future of Idaho.

BOTH MUTTON AND WOOL WANTED

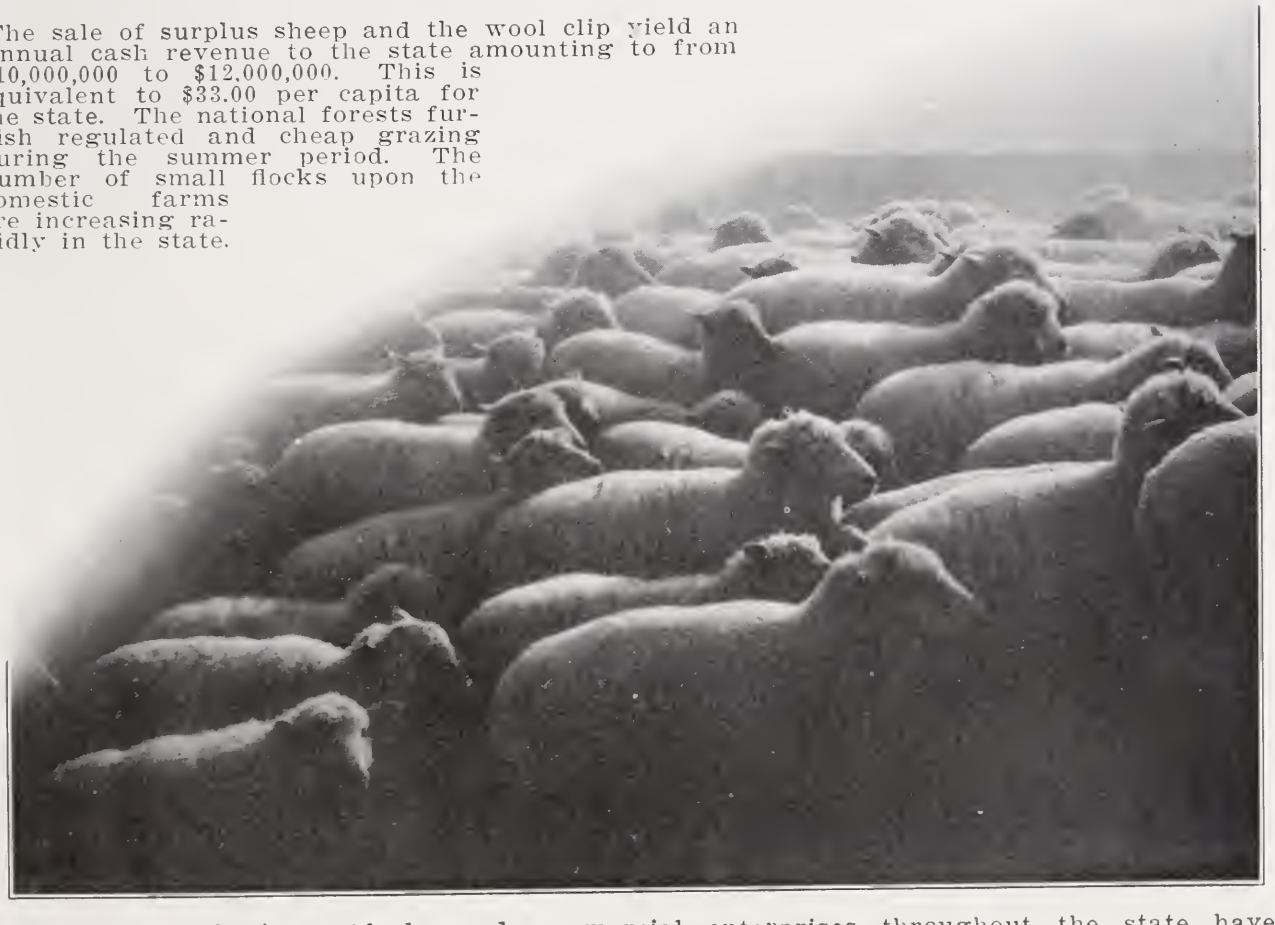
PORK PRODUCTION—ADVANTAGES OF THE HOG.

For the average farmer in Idaho, who has not a great deal of money for the purchase of live stock, the hog offers many advantages. The first important consideration is rapid increase of the herd. A brood sow, if of the right kind, will farrow six to twelve pigs at a litter and two litters a year, if thought best. With a start of two or three sows the farmer soon has a good-sized herd. Someone skillful with figures calculated the returns from one old sow for ten gen-

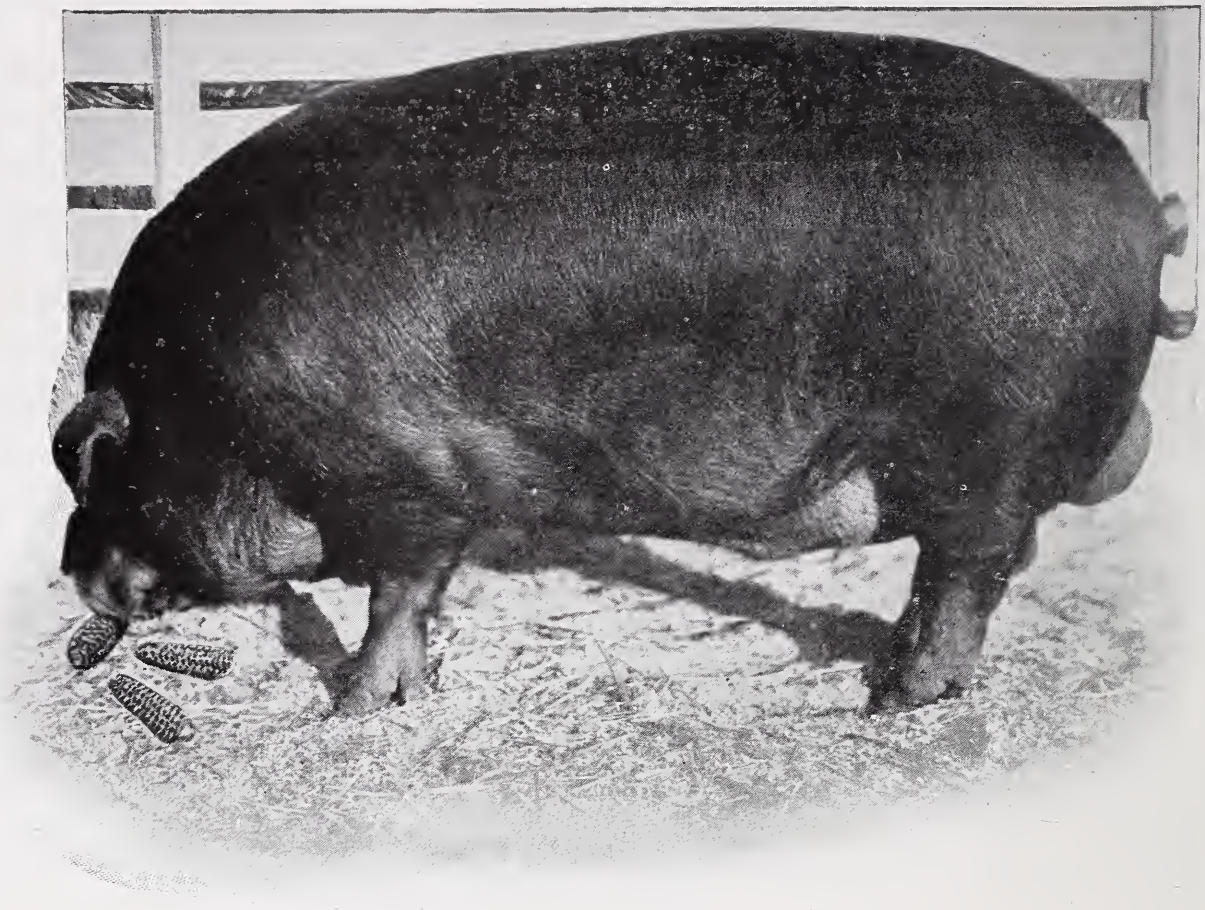
RAPID REPRODUCTION

PROSPERITY AVENUE.

The sale of surplus sheep and the wool clip yield an annual cash revenue to the state amounting to from $10,000,000 to $12,000,000. This is equivalent to $33.00 per capita for the state. The national forests furnish regulated and cheap grazing during the summer period. The number of small flocks upon the domestic farms are increasing rapidly in the state.



Many large business blocks and commercial enterprises throughout the state have been built upon a "wool foundation" and "finished with mutton."



OVERBROOK CHIEF.

No better blood and no better individuals are to be found anywhere than shown in this splendid Lincoln county Duroc sire. Weighted 500 pounds at one year. Breeding stock of this type is exerting a very helpful influence on the herds of Idaho.

erations, on the supposition that she would produce six gilts the first litter and they and their progeny six in their turn. At the end of ten generations the produce of this one brood sow sold at six cents per pound would bring six million, five hundred thousand dollars.

There is an added advantage with swine due to early and frequent reproduction. If hogs are managed according to modern methods, the produce are marketed at six to nine months after farrowing. The old idea was to make the hog intended for market grow as large as possible, reaching average weights frequently of from four hundred to five hundred pounds. We know now that most rapid gains are made when the pig is young. It takes 50% more feed to put a pound of gain on a 150-pound pig as compared with one weighing 40 pounds and 83% more feed for a pound of gain on a 350-pound pig. Economy in pork production forces early marketing and the market aids in this direction by paying most for well-finished, medium weight hogs. The man who is making payments on a piece of property and cannot wait long for cash returns from his land finds that the hog more nearly meets his needs than any other four-footed animal.

QUICK RETURNS

Anyone who has lived in the central states and is familiar with conditions that surround pork production there can testify that freedom from contagious diseases would be the greatest possible boon to the swine industry. In those states on the average one out of every five to seven crops of hogs is a total loss from hog cholera and swine plague. It is true that hog cholera serum promises considerable relief, but at best the method is expensive and entirely effective only under the best conditions.

DISEASE RISK

Idaho offers the producer of pork freedom from the dread disease of hog cholera. So far the herds have been practically exempt and last year when cholera swept the corn belt as a scourge, only one suspicious herd was reported in Idaho. This case was never accurately diagnosed, but if cholera, the infection came from a boar shipped in from the Mississippi valley states. Due to the purifying influence of medium altitude, good drainage, pure air and plentiful sunshine, we seem to have

NATURAL IMMUNITY

now, and with care should be able to retain, a natural immunity from infectious and destructive swine diseases. Feed stuffs and soil products of various kinds are grown so easily and abundantly in our state that the tendency is toward considerable waste. In the wheat raising sections a considerable portion of the crop is shattered and lost in harvesting with the combine, or lost in conveying to the separator. Hogs can utilize this waste and return from eight to eleven pounds of pork for every bushel of waste wheat consumed. Wherever extensive dairying is practiced skim milk is a by-product and can be used by no animal to so great advantage as by the hog. In many cases the summer fallows of the dry farming sections can very profitably grow corn, field peas, and other crops of similar nature. Small potatoes, fallen apples in the fruit sections, pumpkins and squashes, shattered alfalfa leaves and wastes from kitchen and dairy are of great advantage in cheap pork production.

UTILIZING WASTES

HIGH QUALITY FEEDS

The newer irrigated regions have thousands of acres in alfalfa, which may be very profitably utilized by pasturing them with hogs. An acre of alfalfa will keep from 15 to 20 hogs during the summer, and with grain in addition, will make the most profitable gains and a high quality of pork. At the Missouri Experiment Station an acre of alfalfa was found to produce during the summer season $35.71 worth of pork. Idaho alfalfa produces more heavily, grows more rapidly, and is of higher protein, or muscle and bone building content. Red clover is near alfalfa in value as a hog pasture and is grown to advantage in many sections of Idaho. Clovers are so easily grown in Central and north Idaho that red, white and alsike are found growing semi-wild by the roadside, and in open places among the stumps and small trees of the cut-over lands. Rape, oats and rye can be grown in practically every section of the state. The last named pastures have not been extensively tested under western conditions. Fine, early cut alfalfa hay and leaves may be used as a part ration for all kinds of hogs. Grains grown here are of high quality and are adapted to profitable hog raising. In nearly every farming section hog raising will fit in wonderfully well with farm practice.

MARKETS.

MARKETS

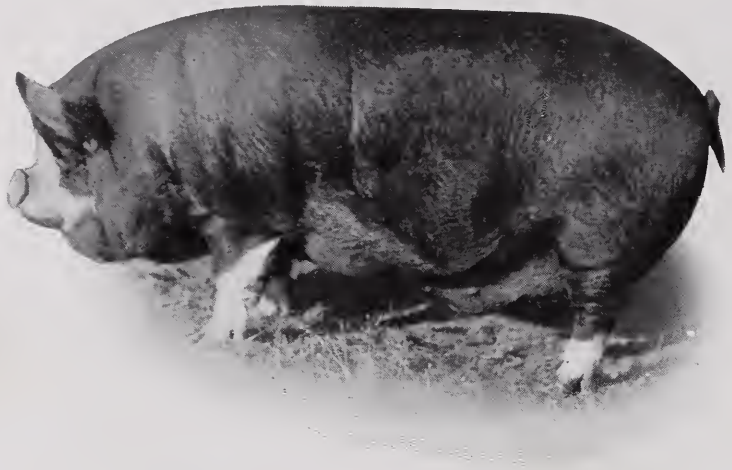
In many new agricultural regions markets are a matter of some concern. The Idaho farmer is fortunate in that market and demands are far in excess of present supply. It is estimated by the railroad authorities that the northwestern states annually import fifteen to eighteen million dollars' worth of pork and pork products. This shortage is as marked in Idaho as in any part of the northwest, and meeting this demand there is profit for the producer. The Idaho farmer should be the producer, have the net profit returned and secure all the other benefits that come from live stock husbandry.

MARKETS AMPLE

Pork now produced finds market in Portland, Spokane and in some of the cities of the state. The Union Meat company of Portland has eagerly bought all hogs offered, and for the last two years has paid a top price of from 50 cents to $1.00 per hundredweight above the top price paid at Chicago. Large modern plants at Spokane are conducted by the Stanton Packing company and the Mitchem Brothers. Several of Idaho's cities have small, modernly constructed, thoroughly sanitary and government inspected plants. The larger slaughtering plants are at Boise, Lewiston and Moscow. Lewiston, Moscow and Wallace have government inspection. These slaughtering plants, compared with others of similar size, are said to be equal to, if not superior, to those of any state in the Union.

A CENTER RUSH FOR PROSPERITY GOAL IN CANYON COUNTY.

Alfalfa and clover with ground barley and Idaho grown corn for a finishing feed means pork production upon the cheapest known basis. Six pure bred gilts of this type well cared for will soon produce more net profit than is required to keep a family in comfort.



THE EAR-MARKS OF A BERKSHIRE.
A TRADE-MARK OF $ $ $

"An acre of alfalfa will keep from 15 to 20 hogs during the summer, and with grain in addition, will make the most profitable gains and high quality pork."

HOW TO START.

HERD FROM SMALL START

The farmer's beginning with hogs need not be extensive or expensive. Good grade sows can be bought at from $15 to $25, and two or three, if good breeders, will inside of a year found a good sized herd. If one leans to pure-breds, and this is commendable, bred gilts can be purchased from reliable parties at from $25 to $40 per head. Splendid pure bred gilts can be bought at weaning time for from $10 to $25.

BUY AT HOME

Buying from breeders in one's own or a neighboring state is generally advisable. The first reason is that there is less risk of getting disease, and secondly, the animals can be bought as cheap and transportation charges are less. Many western herds are well bred and can furnish animals for founding a creditable herd.

BE PREPARED

It would be folly to spend money for good hogs and not give them the right kind of care and attention. Adequate shelter should be provided for all animals, and feed must not be used grudgingly. Few animals suffer more from lack of feed and care and no animals return bigger and quicker returns from proper feeding than good hogs.

TYPES AND BREEDS.

TWO DIVISIONS

Our modern breeds of hogs are divided into two great divisions or types—those bred particularly for bacon and those bred especially for lard. The bacon hog is grown primarily for a long, deep and lean side of bacon, and is a rather long legged, long bodied

BACON

and active style of pig. The nose is long and pointed, the face and head narrow, the neck rather rangy, the shoulders of medium width and the hams rather fine and tapering neatly to the hocks. From this kind of a hog comes our highest quality bacon. At present American markets offer no encouragement for the production of the bacon type.

BREEDS

The most popular breeds are the Tamworth and Large Yorkshire. The Tamworth is bred in some parts of Idaho and seems best suited to our conditions. It is a red hog, in body meeting the description given above, and noted for hardihood, rustling qualities and big litters. The Large Yorkshire is white and similar to the Tamworth in general shape of body, except that the conformation is less angular and the head shorter. They have never been popular in the western states.

LARD TYPE

The lard or American type has been bred for quick feeding and early maturing qualities and possesses those qualities to a marked degree. This hog is of medium length, is lowest, deep, broad, compact and full made in every part. This means a short nose, wide face, fine ears, short, thick neck, the shoulders smoothly laid, wide and barrel-like in spring of rib, wide and deep of loin, long, wide and full in the rump and very heavily fleshed in the hams. This kind of hog is not very active, is an excellent feeder and takes on fat readily and in large quantities. Western farmers have preferred the lard type. Popular breeds are the Berkshire, Poland-China, Duroc-Jersey and Chester White.

BERKSHIRE

Outstanding characteristics of the Berkshire are long, low-set body, strong back of medium width, deep shoulders and heavy hams, short, thick neck, short face rather heavily dished, and up-turned nose and erect ears. Standard color is black and six white points. Berkshires are stylish hogs with breed character stamped in every feature. They

mature early and fatten rapidly, but are not so highly regarded in this respect as the lard breeds yet to be mentioned. The Berkhsire is active on its feet and is an excellent grazer.

POLAND-CHINA

The Poland-China was originated 70 years ago in southwestern Ohio and has been bred for early maturing and deep fleshing qualities. Distinguishing characteristics are a low-set, broad, full-made body, with great hams and shoulders, short neck, straight but short face, full jowl and fine bone. The popular hog in late years is black with white face, feet and tip of tail. The ear should be of medium size and break over one-third from the tip. Poland-Chinas can be fattened and finished at any time after weaning, make excellent returns for feed consumed, and the meat is of fine flavor.

DUROC-JERSEY

The Duroc-Jersey is another breed of American origin. In conformation the ideals of this breed closely approach the modern approved type of the Poland-China. The same long, deep body, with broad, strong back, large hams and shoulders, straight face and droop of the outer third of the ear are demanded. The average Duroc is a little heavier in the bone, rougher in fleshing and hair, and lighter in the hams as compared with the Poland-China. Advantages claimed for the Duroc are in prolificacy, vigor, and grazing and rustling qualities. Standard color is cherry red.

CHESTER WHITE

The Chester White is an American bred, pure white hog of large size, low to the ground, of good length and in width and fleshing of back, depth of shoulders and size of hams, near the Poland-China as an ideal. They make rapid gains when well fed, rank high as breeders, are fair in quality of meat and in grazing qualities compare well with other breeds. Some trouble is found with sunburning, but an experienced breeder near Jerome, Idaho, states that he has had no trouble with the breed in this respect in a region quite typical in amount of sunshine and lack of shade of the irrigated sections of the southern part of the state.

BELTED HAMPSHIRE

Another breed fast gaining popularity among breeders who want an active pig is the Thin Rind or Hampshire. The Hampshire is black with a white belt around the fore part of the body. In form of body they are not so rangy as the bacon breeds nor so compact as lard hogs.

GOOD HOG MOST IMPORTANT

There are families and strains within breeds that differ widely in growthiness, resistance to disease, early maturing qualities and in prolificacy. It is of far more importance to get a good hog than to pay attention to fashionable breeds and pedigrees. In any of the breeds the long, deep bodied and strong backed hog that stands well on its feet and that shows some evidence of growthiness will be found the profitable farmer's type. From a herd of this kind of animals the pigs should be marketed at six to eight months of age, weighing from 190 to 250 pounds.

BETTER THAN A SAVINGS BANK.

"Some one skillful with figures has calculated that one brood sow and her progeny, at the end of ten generations, will produce sufficient pork, which if sold at six cents per pound, will be worth six million five hundred thousand dollars."

HOUSING.

The brood sow and pigs of all sizes and ages need exercise, dry and warm sleeping quarters, fresh air with no drafts and plenty of sunshine. How to best secure these conditions depends somewhat on the farmer's situation. They are made comparatively easy to secure in our state, however, on account of the favoring environmental conditions. To centralize the herd, save labor and time in looking after the animals, and to arrange feeding and exercise yards in a compact space, the large or central hog house is convenient. Where pasture lots are used and centralization of the plant is not regarded as essential, there are many advantages to be found in the cot or colony system. The colony house is cheaply constructed, is sanitary, can be easily moved from place to place and provides a comfortable home for hogs in our moderate climate at practically all seasons of the year. When the sleeping quarters become foul the colony house is moved to a new location, and Idaho fresh air, sunshine and other natural forces disinfect the old location. Such a house provides room for a brood sow and her litter, for four or five dry sows, or from twelve to twenty growing pigs.

COLONY HOUSES

Essential features of a central hog house are maximum pen space for cost of roof, convenience of arrangement of pens, ventilation, admission of sunshine and adequate provision for turning animals into outside exercise yards. Economy of space is best secured by a line of pens on either side of a central alley. Ventilation is provided by means of hinged or movable windows and air shafts. Windows with southern exposure so elevated as to admit light to the pens during the middle of the early spring day mean for health and growth in pigs.

BIG HOUSES

The colony system is preferred by many farmers for the reason that the Idaho climate is favorable to the method, and in wide use of pasture, which fortunately is possible in every part of our state, the colony houses are found to save in labor and expense and to promote rapid, healthy growth of pigs.

COLONY PLAN

FEEDING AND MANAGEMENT.

The problem in feeding and management is low cost of production and ample nutrition adapted to the needs of the animal's body.

GOOD MANAGEMENT

Cheapness of feeding and gains is secured by the use of the wastes and by-products as mentioned before and by pasturing in summer and feeding of legume hays in winter. Under the pasturage system the hogs harvest the crop and make cheaper gains than by any other system of feeding.

ALFALFA PASTURE

Alfalfa is the greatest of all hog pastures. An acre will carry six to eight brood sows and their litters during the summer season and will produce from 500 to 800 pounds of pork. Two or more tracts should be provided so that when one is eaten off the pigs may be turned on another and the first given an opportunity to start again. The western hog grower has a great advantage in his alfalfa. The eastern hog raising sections are fast learning the value of this wonderful forage plant as pasture for swine, but can never hope to grow it as we do.

OTHER PASTURES

Clover is near alfalfa in pasturing value. Field peas and oats are popular pastures in Canada, and have been successfully used in many parts of the west. Rape and kale are also efficient. In Wisconsin it was found that an acre of rape was worth a ton and a quarter of corn. Cereal hays, such as wheat, oats and rye, are used to advantage in some parts of North Idaho.

SUMMER FEEDING

Under Idaho conditions dry brood sows need nothing more than good pasture. Sows suckling pigs should have about one-half the usual grain ration and pasture. The herd boar needs little or no grain when on pasture. Suckling pigs should be taught to eat grain as soon as possible. Pigs on pasture should always have grain in addition. After weaning they should have enough grain, and skim milk, if available, in addition to pasture to keep them growing vigorously and making good gains. The profits of the hog man rest largely on his success in raising pigs.

Alfalfa hay is a tried hog feed for winter use. It is fed whole in a rack, chopped and mixed with grains, or chopped, mixed with grain and steamed. All of these methods give good results. Rack feeding makes least work and is to be preferred when hay is cheap. An animal with a small digestive tract is not adapted to handling coarse hay stems. For that reason, second, and better yet, third cutting alfalfa hay should be fed to hogs. The highest feeding value for the hog

ALFALFA HAY

is found in the leaves and fine stems. Grinding or cutting, therefore, will have little effect of feeding value. The advantage of cutting or chopping the alfalfa comes from a palatable and highly digestible mixture when the cut hay is mixed with grain, and from the advantage of a warm feed in winter when the mixture is steamed for hogs. Some farmers find it a good practice to gather the shattered alfalfa leaves from the barn or stack and feed them to hogs.

OTHER HAY FOR WINTER

Other hays, such as clover, vetch and field pea hay can be widely used in hog feeding and decrease materially the cost of winter keep. Some hog men expect good results on hay alone. This, however, is not wise economy. Brood sows, and particularly young gilts, should have more than hay. From one-third to one-half of the full grain ration and hay in addition is good practice. The herd boar should have some grain and plenty of hay. Fattening hogs cannot make best gains when the ration is made up of more than one-ninth to one-fifth of hay by weight. Fed in those proportions to hogs being finished for market, alfalfa hay saves a considerable percentage of grain.

EFFICIENT SYSTEM

By the system of feeding and management outlined, marketable hogs can be produced in Idaho at a cost of from three to four and one-half cents per pound, which gives the producer a good margin of profit and compares well with the cost of production in any other hog raising state.

The balanced ration is nothing more than the adaptation of rations to the kind and age of animal and to the purpose for which the animal is kept. This is very important in hog raising. Some newcomers to the state have complained because corn is not abundant for hog feeding. If it is the intention of such parties to use corn as the sole feed, it is fortunate that the corn is comparatively hard to obtain. Pigs and breeding swine need feeds high in protein and mineral matter, bone and muscle building elements. Corn lacks in these, and furthermore, is heating and tends to lay on excessive fat. As a substitute for corn we have a number of home grown feeds that yield abundantly and are of high quality.

BALANCED RATIONS

NATIVE FEEDS BEST

The most important substitutes are barley, oats, field peas, wheat and millstuffs. Barley is the hog feed of Denmark and Canada. It is near corn in value for fattening purposes and is much better adapted for feeding breeding animals. Rolled oats, of the kind to be had in Idaho, are a splendid feed for brood sows and

Table showing number of domestic animals in each county of Idaho, as gathered by United States census enumerators in April, 1910.

	Horses	Mules	Dairy Cows	Other Cattle	Swine	Sheep
Ada	7,464	373	4,435	10,698	7,076	418,756
Adams *						
Bannock	10,771	101	7,098	25,435	4,721	171,645
Bear Lake	6,281	71	4,638	13 089	1,933	109,965
Bingham	14,030	189	5,695	15,903	22,918	201,994
Blaine	7,968	141	3,280	19,987	4,271	330,001
Boise	4,480	140	2,339	14,180	2,698	44,898
Bonner	1,982	18	2,139	4,066	1,016	69
Bonneville *						
Canyon	13,928	607	6,572	11,288	10,361	283,801
Cassia	6,462	151	2,632	23,610	3,174	112,030
Clearwater *						
Custer	4,011	21	1,044	19,084	1,594	52,027
Elmore	2,584	56	787	7,262	1,157	117,028
Fremont	20,771	338	8,845	31,609	17,122	321,170
Idaho	13,837	361	4 909	26,09	33,901	46,131
Kootenai	4,475	22	2,570	3,757	1,740	715
Latah	10,516	208	5,223	6,182	9,619	1,197
Lemhi	5,312	65	1,441	29,860	1,553	19,641
Lewis *						
Lincoln	5,511	229	1,915	7,751	2,968	80,385
Nez Perce	19,057	449	6,431	14,929	23,950	16,132
Oneida	14,049	213	6,550	21,157	8,408	119,722
Owyhee	7,581	139	885	29,096	760	192,956
Shoshone	237		583	457	215	52
Twin Falls	6,233	223	2,588	11,397	8,846	63,117
Washington	10,232	268	3,700	20,530	8,345	307,046
Total	197,772	4,383	86,299	367,508	178,346	3,010,478

*—The counties of Adams, Bonneville, Clearwater and Lewis had not been formed at the time when the census was taken. Adams was included in Washington county. Bonneville in Bingham, and Lewis and Clearwater in Nez Perce.

boars in winter, and when sifted make good growth in young pigs. Field peas fit in the ration of any kind and age of hog. Ground wheat in limited amounts can be fed to all sizes of hogs. Of the millstuffs, shorts are a wonderfully good hog feed, especially for pigs on pasture. Bran can be used as a part ration for older hogs. A variety ration or combination of the above feeds will give better results than any one of the feeds used alone.

On the University farm a successful ration for pigs on pasture is four parts shorts, three of corn or barley, and one of tankage. For brood sows and boars, shorts, barley, wheat, oats, bran and tankage are standard and tried feeds. It is our practice to use two or more of the first four mentioned in a mixture, and in addition for a mineral supplement and appetizer, tankage in proportion of one part in ten. In every case the mixture prepared must be adapted to the needs of the animal. Young pigs need protein and mineral matter for bone and muscle building. Young sows need the same elements for the same purpose. These purposes are easy to attain in our state on account of the high protein and mineral content of our feeding stuffs.

UNIVERSITY RATIONS

A number of Idaho grown feeds have been tested at the Idaho Experiment Station at Moscow during the past two years to determine the most economical feed for fleshing hogs for market. In finishing hogs economy and rapidity of gain are essentials to consider. Eight different feed combinations have been tried. Best results come from two different rations. One consisted of eight parts shorts, four parts rolled barley and one part tankage, the other of eleven parts wheat and one part tankage.

IDAHO EXPERIMENTS

In all experiments so far tried it has been found advisable to feed tankage as a supplement in proportion of one in thirteen to one in seven. Tankage is a by-product of the packing plant very high in protein and mineral matter. It may be secured from the Portland or Spokane packing plants. It has been determined from the Idaho experiments that tankage feeding supplementary to standard single or mixed grain rations gives a better appetite, means for higher water consumption, more rapid gains, less cost of same and greater net profit.

TANKAGE FEEDING PROFITABLE

Eighty pigs have been fed at the Idaho Experiment Station during the past two years and accurate records kept. After paying for all feeds consumed at commercial prices the average net profit was $3.27 per pig. Pig feeding, therefore, as shown by this experimental data, affords the farmer a home market for his grains and returns to the feeder better than $3.00 per pig net profit.

TWO YEARS' RESULTS

With proper use of pure water supplies available in our state, hogs are kept clean and are almost entirely free from infectious disease. By skillful use of by-products, pasture, legume hays, and home grown grains, the cost of production is low and hogs so handled and fed are active, vigorous and strong in legs and pasterns. Such a system of management is far better than the corn diet method and produces better brood sows and bigger and stronger litters. If the start is made with hardy and good boned stock little attention need be paid to weak bone and broken down feet.

BEST METHODS

Our feeds and system of feeding give us a balanced ration suited to developing adequately all essential parts of the hog's body. We now have 178,000 hogs. We should have at least ten times this number. The hog eats and assimilates a great variety of feeds, reproduces rapidly, is easily started as a herd, is fed and marketed at a low average cost and in general gives satisfaction to the farmer.

RAISE MORE HOGS

SHEEP CAMP ON THE RANGE.

Table showing number of all classes of live stock of assessable age in each county of Idaho for years 1912, 1911 and 1907.

COUNTY	HORSES			STALLIONS			MULES			DAIRY COWS		
	1912	1911	1907	1912	1911	1907	1912	1911	1907	1912	1911	1907
Ada	5,017	4,341	4,055	35	33	23	174	116	59	3,044	2,735	2,558
Adams [1]	2,456	2,381		21	14		89	79		674	727	
Bannock	5,880	3,702	2,939	*	3	8	70	15	1	3,034	2,371	2,581
Bear Lake	1,410	2,916	2,456	*	30	25	*	*	*	2,588	2,357	1,763
Bingham	4,249	4,696	4,016	26	*	28	31	58	9	2,089	2,188	1,861
Blaine	6,335	5,482	3,233	23	3	9	92	113	14	1,749	1,931	834
Boise	2,451	1,599	2,466	*	*	15	131	149	60	1,068	131	340
Bonner	2,470	2,464	1,820	9	6	6	11	7	*	1,469	1,567	1,542
Bonneville [1]	2,957	2,841		22	18		47	37		1,325	1,422	
Canyon	9,707	10,203	7,475	54	31	31	429	316	172	5,273	5,156	3,578
Cassia	4,174	4,593	2,880	23	44	21	59	102	33	1,339	1,605	765
Clearwater [1]	1,281	1,362		6	5		35	39		799	727	
Custer	4,198	3,712	2,546	44	30	25	46	28	*	616	617	428
Elmore	1,607	1,644	1,224	20	17	12	117	106	22	473	369	270
Fremont	11,456	10,497	6,745	14	90	46	32	*	*	6,096	5,879	3,726
Idaho	9,002	8,366	7,832	24	16	29	161	143	89	2,256	2,079	1,569
Kootenai	3,213	3,708	1,497	*	26	*	*	*	*	1,627	1,755	1,915
Latah	5,532	5,628	5,048	30	44	17	6	52	23	3,128	3,005	2,872
Lemhi	4,694	4,498	3,579	39	19	21	36	51	16	1,008	998	707
Lewis [1]	4,808	4,458		33	12		184	82		1,558	1,651	
Lincoln	3,172	3,079	928	21	42	8	150	119	4	1,408	1,005	265
Nez Perce	7,334	7,427	11,276	39	53	56	294	275	92	2,428	2,667	4,958
Oneida	8,357	7,130	4,383	46	28	96	*	48	3	3,759	3,793	3,057
Owyhee	5,200	4,987	5,471	43	1	17	253	198	164	442	468	447
Shoshone	704	694	769	1	36	*	20	9	5	577	671	797
Twin Falls	7,667	6,565	2,848	48	*	8	425	245	25	4,030	3,095	697
Washington	5,325	5,533	5,659	54	36	23	209	172	71	1,522	1,657	1,505
TOTALS	130,656	124,506	91,145	675	637	524	3,101	2,559	862	55,379	52,625	39,035
	Increase in 1 year, 4.93% Increase in 5 years, 43.34%			Increase in 1 year, 5.96% Increase in 5 years, 28.81%			Increase in 1 year, 21.18% Increase in 5 years, 259.74%			Increase in 1 year, 5.23% Increase in 5 years, 41.87%		

1—In 1907 the counties of Adams, Bonneville, Clearwater and Lewis had not been formed. Adams was a part of Washington county. What are now Clearwater, Lewis and Nez Perce counties comprised Nez Perce county, and Bonneville county was a part of Bingham county.

*—No reason can be attributed to the absence of stallions and mules in these counties other than that the county assessors in the abstracts of the assessment rolls that they furnished the state auditor failed to show that any stallions were listed.

Table showing number of all classes of live stock of assessable age in each county in Idaho for years 1912, 1911 and 1907.—(Continued)

COUNTY	CATTLE OTHER THAN DAIRY COWS			SWINE			SHEEP		
	1912	1911	1907	1912	1911	1907	1912	1911	1907
Ada	4,092	4,136	6,942	1,992	1,144	850	52,678	51,602	102,302
Adams	4,883	3,972		1,277	1,186		18,668	36,366	
Bannock	9,704	7,106	10,480	963	136	353	50,425	30,982	46,177
Bear Lake	6,344	7,157	7,884	517	240	219	67,581	35,780	7,149
Bingham	1,700	2,199	5,239	3,950	2,842	3,216	17,612	2,979	53,909
Blaine	7,559	9,271	13,440	1,325	860	389	89,811	151,649	127,212
Boise	5,496	8,323	8,431	1,163	890	453	40,534	35,837	48,360
Bonner	1,730	1,882	2,498	482	393	272	201	199	32
Bonneville	3,882	4,789		3,444	2,753		63,402	66,695	
Canyon	3,898	3,939	9,369	4,491	1,167	1,705	74,642	74,360	138,198
Cassia	9,147	10,512	10,686	1,608	769	388	52,409	40,885	40,856
Clearwater	1,089	789		759	863		1,183	798	
Custer	11,635	12,513	15,854	383	286	276	46,411	46,640	21,011
Elmore	3,053	3,888	6,396	180	180	106	90,757	104,153	84,841
Fremont	10,119	8,685	8,118	5,333	3,518	120	138,453	167,716	161,958
Idaho	12,219	12,314	18,643	11,436	10,360	10,164	39,770	56,462	14,599
Kootenai	1,064	1,155	1,816	636	575	214	600	304	195
Latah	1,224	1,642	3,582	1,426	1,753	1,437	454	412	719
Lemhi	13,501	15,702	20,297	979	651	530	29,962	31,424	8,701
Lewis	2,750	1,503		4,012	3,209		171	2,031	
Lincoln	1,315	1,449	2,194	2,560	881	127	54,737	38,526	76,828
Nez Perce	3,148	3,708	10,078	6,193	4,989	6,939	9,012	10,731	10,481
Oneida	6,369	4,543	9,630	634	276	41	3,347	5,015	79,185
Owyhee	17,128	15,800	20,156	317	201	299	195,299	194,983	190,025
Shoshone	104	65	255	202	139	201	220	50	70
Twin Falls	4,378	7,724	7,406	6,999	3,033	1,172	93,782	73,611	8,843
Washington	3,208	4,847	18,563	2,912	2,370	1,968	95,287	109,319	175,711
TOTALS	150,739	159,612	217,957	66,173	45,664	31,439	*1,327,409	1,364,509	1,397,362
	Decrease in 1 year 5.56%			Increase in 1 year 44.95%			Decrease in 1 year 2.71%		
	Decrease in 5 years 31.84%			Increase in 5 years 110.48%			Decrease in 5 years 5.00%		

*—It is evident that the number of sheep reported is much too low. The amount of wool shipped out of the state over the Oregon Short line indicates that the number of sheep that were sheared in territory tributary to that line in 1912 exceeded 3,000,000 head. In addition to these shipments large quantities of wool were shipped by water route from Lewiston and also by the four transcontinental railways hat serve the northern and central parts of Idaho.

Poultry for Profit

There is also a wealth of health and wholesome employment for each member of the family on the commercial poultry farm.

Poultry in Idaho

MILLER PURVIS, WENDELL, IDAHO.

One of the undeveloped resources of Idaho, which is destined to become of first importance, is the production of poultry and eggs. Enough already has been done in this connection to indicate what may be expected of the future, and the purpose of this article is to point out what reasonably may be counted upon by anyone who engages in the poultry business in this state, either as a specialty or as an adjunct to fruit growing, dairying or mixed farming.

INFORMATION, THAT'S ALL

Idaho is particularly well suited to the production of poultry. The climate and general elevation is almost exactly that of the original home of our domestic fowls in the highlands at the base of the Himalaya mountains of northern India. The jungle fowl, from which our domestic fowls are descended, originally inhabited the high foot hills of the mountain chain which bounds India on the north, its range extending from the high lying plains up to an elevation of several thousand feet above sea level. This is a country of wide, open plains and heavy forests, and here the jungle fowl made its home where it could have many sunny days in the year, a climate where pure air, clear water and abundant vegetation produced the grains, grass seeds and insects on which it lived. In this country there are no long periods of extreme heat, no continued cold weather, and the same is true of Idaho in all parts of the state where poultry keeping is likely to be carried on. The moderate winters admit of carrying fowls through the cold weather without going to great expense for houses in which to shelter them; the sunny summers without sudden and severe storms make it possible to rear young fowls of all kinds with the smallest loss from accidents. The dry soil makes an ideal range and there is not another state in the Union where young fowls do better, grow more rapidly, or mature more quickly than they do in Idaho.

HISTORICAL ANALOGY

NATURAL ADVANTAGES

It is estimated by eastern poultrymen that they rear hardly more than one-half of the chicks that are hatched. Two or three years ago Farm Poultry, a poultry publication issued in Boston, asserted that it requires four eggs to produce one mature fowl. In this estimate the hatch from all the eggs incubated was placed at 50 per cent, thus giving one chick for each two eggs. Then it was estimated that one-half of the chicks that got out of the shell were lost before reaching marketable age. This left 25 chicks for each 100 eggs. The writer is perfectly familiar with conditions as to poultry raising in every state in the Union, having visited prominent poultrymen and inspected poultry plants in all parts of the country, and he can call to mind instance after instance where not ten chicks have been reared to maturity for each 100 eggs incubated, so he agrees with the estimate of Farm Poultry that it requires at least 100 eggs to produce 25 mature fowls in any part of the country east of the Rocky Mountains.

MINIMIZING THE LOSSES

A LOT OF EXPERIENCE

The writer has now had three years' experience in raising poultry in Idaho, rearing it under conditions that might be duplicated by any one in any part of the state, and each year he has been surprised at the small loss after the chicks are hatched. The total loss during the three years has been under five per cent of the chicks hatched. During the season of 1912 more than 300 young fowls were hatched and the total loss after hatching might be counted on the fingers

QUEEN OF THE LEGHORNS.

It has been said that "the breed that lays is the breed that pays." White Leghorns fill the conditions as far as laying is concerned.

James A. Whitmore came to Idaho in 1907 from Kansas. He brought with him about $2,200 and a bundle of receipted doctor's bills, a wife and a daughter, and a determination to establish a home in a healthful climate. He had for years cashed in his weekly check and he found it rather difficult to become weaned away from the weekly stipend. Thirty White Leghorns helped to develop a few acres that became his home. The poultry and fruit ranch served to start him in as boss of his own business. He never "sets a hen," but uses the incubator entirely. He now uses electricity for heat in his incubators, brooders, heating his residence, and for many domestic needs. Electricity is cheaper and far more satisfactory. The heat is absolutely steady and dependable. He now does considerable custom hatching, in addition to hatching for his own needs. He has a small orchard where most of the poultry is kept.

Poultry and fruit growing work nicely together. The returns from his 800 layers, of which 500 were pullets, and his three acres of orchard, yielded him the following revenue for the year 1912:

Market eggs	$885.00	
Broilers and frys	400.00	
Hens and day-old chicks	500.00	
Peaches	400.00	$2,185.00

Other items will bring the total sales to $2,400.00.

In addition to the feed produced upon the place, additional feed was purchased amounting to nearly $500.00. Mr. Whitmore and his family are much better satisfied with their out-door work and an opportunity for the family to be together. They contemplate an income for 1913 amounting to $3,500.00.

From 10 per cent to 15 per cent more of the hatch can be reared under conditions in Idaho than can be reared in districts where there are sudden thunder-showers to chill and drown the chicks. The higher altitude and dry climate appear to make poultry less liable to be affected by disease. Gapes and roup are rare and there are no rat pests to dwindle the profits.

There are health and wealth dividends awaiting you in the poultry business in Idaho.

AMBASSADOR TO THE THRONE OF PROSPERITY.

His very attitude shows vigor and vitality.

Poultry products can be produced with a better margin of profit in Idaho because there is less disease and less loss from untimely and unexpected rains that often cause heavy mortality with the chix. In addition to a large under-supplied home market, there are insistent export markets that must be supplied to the coast cities. Alaska took $62,000 worth of poultry products from Puget Sound ports during the month of June, 1912. The territory immediately tributary to the great cities on the coast cannot supply the domestic needs. This shortage, together with practically all export material, must come from the intermountain country or from farther east.

of his two hands. To be exact so far as known, the loss was just seven chicks from unknown causes. Not a single chick was lost from hawks or predatory animals. Two or three were killed by an accident which might have been prevented, but such cases should not be counted against the conditions under which poultry is bred.

Feed of all kinds necessary for poultry is produced in profusion, and the yield of the land is so large that but little land need be devoted to crop growing to produce feed for a flock as large as any one person can care for. If feed is bought it can be bought at very moderate prices, if advantage is taken by buying when this can be done at the lowest prices. For such by-products of the mills as are needed by the poultry keeper there is no lack, as the mills of the state furnish them in abundance and sell them at reasonable prices.

CHICK FEED

The markets open to the poultry keeper in Idaho cannot be surpassed by those of any other section of the country. There never has yet been a year when Idaho supplied all the eggs or fowls consumed within the state and there is no prospect that there ever will be. Hundreds of carloads of storage eggs are consumed in the state every year, all of which are bought at high prices and all of which might easily be produced within the state. While the farming area of Idaho is as large as two or three of the eastern states, this is but a small part of the state as a whole, and thousands of square miles of the mountainous parts of the state are not susceptible of cultivation. However, the wide reaches of mountain and forest are not lying deserted and idle. The mountains are filled with mining and lumber camps and immense bands of sheep, cattle and horses roam the forests the summer through with an army of men watching them. The number of people engaged in productive industry in the mountainous and wooded portions of Idaho will increase as the years go by. The government system of forestry is constantly working to renew the forests as the matured timber is converted into lumber, and as long as the world stands and the needs of man call for the use of lumber, there will be lumber camps in ever-increasing numbers, as the forests are now handled with more intelligence

QUANTITIES IMPORTED

and care. The mining interests of Idaho require the labor of thousands of hands, and the mining possibilities of the state are almost beyond comprehension, as work that has been done has made scarcely more than a faint mark here and there in the mineral resources of the state.

None of the lumbermen, miners or stockmen produce poultry or eggs They earn good wages, like good things to eat, and buy what they want when they can get it, without much regard for the price asked. The inhabitants of the minor fractions of the state in which poultry keeping may be carried on must always supply the poultry and eggs for the thousands of lumbermen, miners and stockmen, or they must look to other states for their supplies of this nature. They naturally prefer to buy the fresh products of the poultry yards from their neighbors in the open country, but so far they have been compelled to look elsewhere for a large part of their supplies. This great and increasing demand is open to be supplied by Idaho poultrymen and it is a market which the poultry-keepers of no other section can take away from those of this state.

BUT FEW PRODUCERS

After the demands of the state are supplied, there are hungry and insistent markets in every direction. Five great transcontinental railroads cross the state, one from the east and south, and four from the east and north direct. These reach all of the great markets of the middle west and of the Pacific coast country, extending to Alaska on the north and San Francisco on the south, with the great ships that traverse the seven seas touching their ports and buying their supplies. There lies to the north and east the great stock ranges and rich mining countries of Wyoming and Montana, and there is hardly a place where poultry is kept or may successfully be kept in Idaho that cannot reach Salt Lake City and Ogden in Utah, Butte and Anaconda in Montana, Spokane, Seattle and Tacoma in Washington, and Portland, Oregon, within twenty-four hours by express, and all these cities use immense quantities of poultry and eggs. All of these markets consume hundreds of carloads of stored eggs and frozen poultry every year, and the wide stock ranges of Nevada, and the mining towns of that state use the products of the poultry yard in profusion, and all of this country will pay tribute to Idaho poultry keepers as soon as railroads now being promoted are opened from southern Idaho to points in Nevada, which places Idaho in close proximity to San Francisco.

HUNGRY MARKETS

WIDE DISTRIBUTION

Here, then, is a country that is destined to be one of the chief garden spots of the world, with a soil as fruitful as the valley of the Nile at its best, a climate where men regain health that has been lost, or keep healthy and hearty to a ripe old age, surrounded on every hand by stock ranges, immense forests, rich and prosperous mines, all using the labor of men, paying them high wages, feeding them well, ready to take everything in the way of poultry and eggs that is offered in the markets. Such conditions do not prevail in any other locality in the wide world and these are not temporary conditions that will soon be changed. They will be practically the same one hundred years from now as they are now. Idaho presents the unique position of holding within its borders a rich and fertile empire surrounded on every side by mountains, forests and stock ranges which will always remain uncultivated and under the necessity of buying their foodstuffs outside their own vicinity.

UNUSUAL NATURAL ADVANTAGES

As the farm lands become more closely settled, mills, factories, canning establishments and all the myriad town industries are established, the open country will demand more to eat and prices will advance. The immense electrical power to be found in the many falls along the streams of Idaho assure the establishment of hundreds of factories of various kinds in the immediate future, and a very large consuming population. In fact, there can be but little doubt that before many years the manufacturing interests of Idaho will equal and excel the mark set by many of the older states of the east because electric power is destined to become the motive force of the world and it cannot be produced more cheaply anywhere on earth than in this state, where stream after stream is stepped with great waterfalls.

FACTORY MARKETS

The next question that naturally comes up to one who is considering Idaho as the field of his operations is what kind of a place is Idaho, considered as a home. A truthful answer to this question will be so convincing that one might well choose it for an abiding place even if it were not so well suited to the industry which this article discusses. Some one has said that Idaho has a Siberian summer and an Italian winter, a combination with which no fault could be found. It lies far enough to the north that its summer days are long and the climatic conditions are

HOME ENVIRONMENTS

such that the summers are a succession of sunny days, cloudless skies and breezes which keep the temperature comfortable even when it reaches the point where people in the east are in distress and sunstrokes are common. Such a thing as a "sunstroke" is unknown in Idaho. There are no violent electrical storms such as are common in eastern and middle west states. It is quite possible to work out of doors every day during the growing season without experiencing any particular discomfort. The air is so dry that perspiration induced by muscular effort evaporates at once, and this evaporation keeps the body cool and comfortable. There are no "muggy" sultry days when the moisture-laden air becomes so over-heated that one has the sensation of being stewed in his clothes.

SIBERIAN SUMMER; ITALIAN WINTER

It is a rare day that a cooling breeze does not blow and the nights are invariably cool enough so that one can sleep in comfort and get that rest for which nature provided sleep, and the working man rises in the morning rested and refreshed instead of feeling the depression that a hot night in the east leaves with one. For one whose health is somewhat impaired these cool nights are a blessing indeed, as they assist nature in healing the ills of the body, the pure air and pure water assisting in this

REFRESHING REST

FEEDING THE FIVE THOUSAND.

It is good to see such a hearty and healthful girl and so many chicks in one flock without a single one of them that does not seem perfectly healthy. One hesitates to tell the whole truth about poultry rearing in Idaho because it really is marvelous that so few chicks should fall by the way and succumb to the troubles incident to chickenhood. It is not uncommon in the eastern states to lose half or more of the chicks that are hatched. Stress of weather, disease or obscure causes lead to the loss of hundreds of thousands of chicks every year in the eastern states, but here accident is about the only cause of loss that is known among those who take good care of their young fowls.

A study of this picture is worth while to anyone having children who is interested in poultry. This girl has perfect health; she is engaged in something that interests her and at the same time is helping to earn money. How different her lot and looks as compared with many city girls, who live in crowded tenements or congested quarters where every breath of air is polluted with the thousand odors that distress a city. Girls reared under such circumstances grow up slender, dainty, weak in body and listless in mind, while this girl is growing up to a robust womanhood, ready to assume any duty cheerfully and perform it competently. She has pure air, life-giving sunshine, wholesome food fresh from garden, field and orchard, making play and getting pleasure from useful and profitable occupation. Both girl and chicks are well started in life and examples of the truth of the old saying "Well begun is half done." In caring for the chicks the girl is studying the great book of nature, getting knowledge at first hands and absorbing the sort of wisdom that comes from on high to those who live near to Nature's heart.

THE VAN DUSEN RESIDENCE AND PART OF HIS BUILDINGS

The lower view shows the open front type of scratching shed. Two acres of ground and all of the buildings have been paid for out of the proceeds of his poultry plant.

Failing health caused Dr. W. W. Van Dusen to leave the ministry. He had served as pastor and district superintendent in the Methodist Episcopal church, covering the entire state of Idaho, and is widely known. He purchased two acres of land, built a modern home, and from his flock of 350 hens and his battery of eleven incubators, he now has an income of $1,500 per annum. His eleven incubators have a total capacity of 2,800 eggs. He does custom hatching at 5 cents per chick, and also sells his day-old chicks from choice breeding pens at 15 cents per chick and up. He uses the White Leghorn and White Orpington chickens and Indian Runner ducks. He will increase his flock to 1,000 mature birds for the 1913 season and expects to produce a net profit of $2,000 per annum. He has almost no bother from disease and his chicks plump up remarkably quick.

The interurban cars place him in touch with the city markets; his home is equipped with telephone, electric lights and other modern conveniences. He has sufficient room on his two-acre farm to grow considerable fruit and vegetables, and also maintains a beautiful lawn. His real estate has doubled in value since he purchased it in 1907.

process, until merely living in Idaho is a cure for many diseases and a preventive of most of the ills to which human nature is subject in other places.

Notwithstanding Idaho is considered one of the new states and is just being settled, it enjoys all the comforts of the eastern states and many conveniences that the oldest sections of some of the oldest states do not enjoy.

MODERN CONVENIENCES

There is hardly a hamlet in Idaho that is not reached by a daily mail, that is not in telephonic communication with the outside world, where daily papers do not reach the day they are published, and where electric lighting is not the common method of illumination. Electric railroads are built and are building and are being promoted to such an extent that soon the state will be crossed by them in every direction and everyone will be within easy reach of public means of travel.

The people of Idaho are its pride. They either come from sturdy pioneer stock or are of the most progressive people of the east, pople who understand and appre-

GOOD NEIGHBORS

cite the fact that within the borders of Idaho lies the Land of Opportunity—people who have not been content to sit down with folded hands or plod along in the old slow way, but have come to this better country where the horizons are wider, the views grander, and where life may become bigger and in every way better and more worth while. Such people are worth knowing—worth having as neighbors and friends, worth standing with, shoulder to shoulder, foot to foot, while fighting the battle which is building up a great and grand empire where once it was thought there were but barren deserts and impassable mountains. It is worth something to live in a country where one can see almost every acre of land across a valley 250 miles in width as the writer can see from the window beside him as he writes these words.

We have in the foregoing set down the exact facts concerning Idaho as we have

observed them during our three years' residence in the state, three years during which we have had opportunity to see every part of the state, meet people from every part of the state, observe for ourselves the products of every part of the state. We know without having to depend on hearsay that what we have so far written is based on exact facts which any one can easily verify without trouble. We now come to the questions of how to begin and what we may expect as the result of our labors. How much money must one have to make a start, and how much money can be earned by making poultry breeding a business in the state of Idaho? As in every other business the answers to these questions depend in some measure on the business capacity of the one who undertakes it. We can best answer these questions by showing what has been and is actually being done in this state by those who are engaged in poultry breeding in a special sort of way. Very few in the state make poultry breeding their sole business because poultry breeding and fruit growing go so well together and can be so successfully carried on on the same land, thus getting a double profit from every acre, that these two branches of rural work are usually combined.

GETTING STARTED

To begin, land is cheap in Idaho as yet, but is constantly rising in value and before

THE HAND THAT ROCKS THE CRADLE ALSO FEEDS THE CHIX.

The problem of housing poultry is a very simple one in Idaho. The illustration shows one style of house that is entirely comfortable in all parts of the state where general agricultural crops are grown. In a house such as the one shown fowls get plenty of pure air and poultry authorities declare that plenty of fresh, pure air is of vital importance to fowls, much more so than to any other class of live stock. It is a demonstrated fact that hens cease to lay, no matter how well they are fed, if they are deprived of a plentiful supply of pure air to breathe. Fowls endure with comfort a much lower temperature than human beings or the common farm animals. This is due to their higher bodily temperature, which ranges five or more degrees higher than that of human beings. Besides, they are equipped with a coat of feathers wonderfully adapted to protect them from cold in winter and heat in summer. It is claimed by our best authorities that one of the reasons why hens do not commonly lay in winter is because at that season they are usually confined in restricted quarters during the night, with poor ventilation, where they are obliged to breathe impure air. In a climate where the necessary quantity of pure air can be as easily arranged for as in Idaho, it is not surprising that eggs in winter, when they are high priced, is quite the common thing, where poultry is properly fed. With eggs at 50 cents and 60 cents a dozen, to which prices they always attain in winter in the northwest, the Idaho poultry keeper may count on sure profits from his flocks.

many years will be worth as much as any land in the northwest. The man who acquires a few acres in Idaho before values begin to rise will, without doubt, quadruple his investment. In addition to a living for himself and family, upon anywhere from twenty acres of land up, he will in a few years have a comfortable competence without serious effort on his part, simply from the rise in the value of his land. Already there are sections in Idaho on which fruit trees have come into bearing, in which land values have gone up to the thousands of dollars per acre. When a man can get $1,300 per acre for the apples he has grown in one year, as has been had in this state, the land on which apples grow becomes almost priceless. The world is land-hungry and land is one of the things which can not be manufactured to order. There is just so much land in the world and this is rapidly being occupied and it will not be very long until land will become immensely valuable. There is yet room in Idaho for the man with but little money and an abundant opportunity for him to add to his possessions and build up for himself a fortune large enough for all his needs—large enough to supply him with every necessity and all the luxuries a reasonable man would ask for.

DOUBLE PROFITS

The man who can command from $1,000 to $1,500 may, with good management, be able to establish himself in the poultry business in Idaho and after the first few months, receive enough from the business to satisfy his necessities, and at the same time be increasing his flocks and improving his land. There is no other line of business where a man can work for himself and make progress so fast as he can in the production of poultry and eggs. When the land is secured, it costs but a small sum to buy fowls enough with which to make a start. These will begin to pay for themselves at once, and if the venture is made in the spring, the hatching of chicks may be started at once, and in the course of ten or twelve weeks the surplus cockerels will be ready to sell as spring chickens, while the pullets may be retained to make the layers for the coming year—beginning when they are from five to six months old. With an initial investment of as little as $100 the beginner will be able to buy 100 fairly good hens of pure blood, and these will produce eggs enough to pay the food bills for themselves, and also keep a family of moderate size.

BE YOUR OWN BOSS

As an example of what has been done, we know of a flock of 85 laying hens that, during the spring and summer of 1912, produced eggs enough to pay for their own feed and all the feed consumed by nearly 200 chicks, besides a surplus which paid a large part of the grocery bills of a man and his wife. In this case the chicks reared may be considered the profit of keeping the hens. If half of them were pullets which will be ready to lay in the fall and half cockerels, the cockerels would sell in the market for enough to pay for all they had eaten up to the time of selling and all the pullets had eaten. In this particular case the fowls were of high class and have been required to sell as breeders and the owner will get from $2 to $10 for each of them he cares to sell, and this market for breeding stock is open to anyone who will begin with pure bred birds and take pains to promote growth and thrift in the young so they will mature quickly and be of good size. Counting it another way, this particular flock produced eggs enough at market price to keep a man and his wife in all they needed in the way of food during the time from January until late in the fall, at which time the young pullets raised this year will come into laying form and the food problem will be solved by the proceeds from the pullets. As a matter of fact, this man sold a large number of eggs to his neighbors and friends at ten times the regular market price, as he keeps fine fowls and has a good sale for them and for eggs for hatching during the breeding season. This same man has considerably more income from his chickens, turkeys and ducks than from forty acres of land which is being developed and used for the production of field crops. What crops are raised are fed to the hens and thus a home market at the highest price is established, for no farm stock will pay as high a price for the grain produced on a ranch as a flock of well bred hens in good laying condition.

GOOD PROFITS

HOME-GROWN FEED

The man with twenty acres of land will be able to keep a thousand hens very easily, and these hens will give him a net income of at least a thousand dollars per year from the start, while the land will return as much more in five or six years if planted to fruit and given proper attention.

$2,000 A YEAR

Another example showing what may be done is the case of Mr. S. Less than fifteen years ago Mr. S. was without means. He had followed mining in two states and had tried general farming without any notable success. All he could show for years of labor was just one hundred dollars. For years he had wanted to go into the

poultry business but had never been able to accumulate enough to make a start. Finally there came to him the chance to begin. A man who knew him offered to sell him twenty acres of land for two thousand dollars and give him time to pay for it. Mr. S. accepted the chance and started in to establish a poultry and fruit ranch. He planted a part of the land to prune trees and on the rest he raised vegetables and poultry. By careful attention to his business he made a living and increased his flock of fowls until he had a thousand hens. Then his prune trees came into bearing and he had an additional source of income. The hens ran in the prune orchard and the droppings from the poultry houses were used to fertilize the trees while the hens did all the better for the shade furnished by the trees and the combination began to work much to the benefit of Mr. S.

POULTRY AND FRUIT

He now has twenty acres for which he could any day take ten times the price he paid for the land, but he would be very foolish to sell because the aggregate sale of prunes, poultry and eggs from that little ranch has amounted to $7,100 in a single year. All this has been done by a man who started less than fifteen years ago with a total capital of $100 and a team, which he told the writer was worth at the outside $100. He has brought up his family, gave them every possible advantage, has lived well, is now living at "the top of the heap," as the saying is, and putting money in the bank regularly. The same opportunity that came to Mr. S. is open to anyone.

SPLENDID REWARD

Irrigated land sells according to the cost of getting water on it. On some tracts the price is around $35 per acre, including water, and on others as high as $75 per acre. All this land is practically of the same quality. The difference in cost is due chiefly to local conditions. As an example of how land increases in value with cultivation, a case has come to the writer's notice since this article was under way. Ten acres which were set in apples, the trees were six years old, sold for $650 per acre. This was exactly $624.50 per acre more than the owner paid for it six years ago. The owner of the adjoining ten acres refused a thousand dollars an acre for his holding. These men made a clear thousand dollars a year by simply improving their land and setting out fruit trees. Six years ago this land cost $25.50 per acre. The water cost was $25 and the state of Idaho sold the land for 50 cents per acre. If these men had started out by putting poultry on their little ranches they could have been making a nice income from the land while it was increasing in value a thousand dollars a year. They made a living as it was and the land made them a thousand dollars a year profit.

YOU CAN DO AS WELL

Fertile soil and advancing prices are not the only things that seem alluring when thinking of Idaho. It is the thought that here the men and women who have suffered in health from the rigors of more severe climates may come and prolong their usefulness by regaining their health and become the co-workers of those who, with them, will be remembered as the builders of an empire that might have aroused the pride of the mighty chiefs of old.

HEALTH AND WEALTH

Children who have grown up lacking proper development in the cities of the east are brought to Idaho and in the pure air and the stimulating climate become

THANKSGIVING SURVIVORS.

All that remained of the Smitchger flock after Thanksgiving.

Profits amounting to $7,000 annually for the last three years is the story of success as told by L. Smitchger who operates a 20-acre fruit and poultry ranch in the Boise Valley. He keeps about 1,000 Brown Leghorn hens which net him better than one dollar per hen each year. He sells his eggs at wholesale to large consumers in the city. He also raises a flock of turkeys each year. His poultry plant is simple and inexpensive.

A portion of the ranch has been in bearing prune orchard for several years. Ten acres were recently planted.

During the 1912 season he shipped four carloads of fresh prunes to eastern markets for which he received $3,900. He also sold from the same orchard $1,200 worth of dried or evaporated prunes. The entire orchard, including harvesting the crop, was done by the owner and his family, except a few days at picking and packing time additional help was hired which cost him about $200. His ranch which originally cost him $1,000 is now easily worth $20,000.

ruddy, hearty, and the pride of the country. Men who have worked too hard in shop, mill, or office, come here and among their fowls and fruit trees soon begin to stand erect, breathe deeply, expand in every way, and before long they step with the free, elastic stride of youth, forgetting aches and pains, because the air that comes from our sheltering mountain ranges is like new wine in its effects. Here work becomes a pleasure, profits are certain, and a competence within the reach of everyone.

NATURE'S SURROUNDINGS

The man or woman who takes delight in poultry breeding, who likes to watch nature develop her children, whether these be chickens, ducks, turkeys and geese, or fruit trees and plants, may come here and study the great open book of nature through many sunny days from the cool, rosy morning until the great white stars that hang so low in the purple skies, shine at the end of the day, and yet never know the exhaustion of fatigue that so often comes to workers in the east. It is hard to write about Idaho without becoming enthusiastic, hard to state exact facts without being suspected of exaggeration. Because these things are as true as truth, we are writing these pages to invite those who desire to better their condition while working at the business that delights them most, come to Idaho, where land is yet plentiful and cheap, and make their home with us.

As a state in which to carry on poultry breeding, Idaho has no superior. Our statements are not mere guess-work; not mere theories of what may be done, but rather we have tried to show *what is being done.*

Here we find favorable climatic conditions; cheap feed; easily reached and insistent markets; good prices; beautiful scenery; lovable people; modern conveniences; and all the things that make life worth while.

BEAR LAKE SUMMER RESORT.

The summer resorts furnish excellent markets for poultry and other supplies. Heber C. Sharp of St. Anthony, Fremont county, finds an excellent market in the Yellowstone National Park, where thousands of tourists spend an outing period.

This is a near-by market that takes large quantities of material. Mr. Sharp would do better if he had larger quantities to supply. He now keeps about 800 hens, which net him $1.50 per hen per year. It costs him about $1.00 per hen to erect comfortable houses for his flock, as he is located where there is more winter weather than in some other districts. Mr. Sharp and his wife feel that one of the most gratifying features of the business is the interest that his two little boys take in the poultry plant. They deliver to customers and have early learned how to compute their commissions and how to use their own money. They never get "short changed." They keep accurate records. The discipline required is an excellent training.

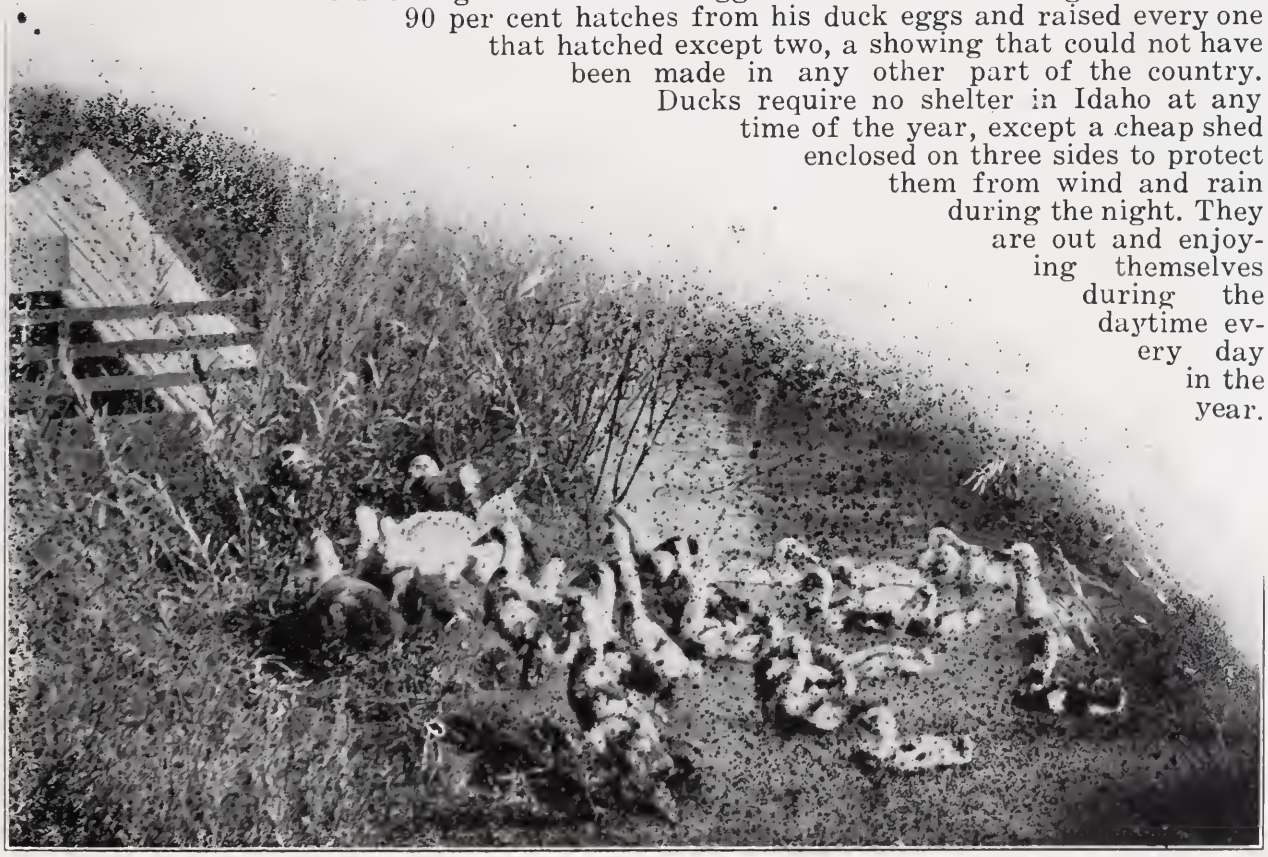
The "New" Swimming Hole.

(With apologies to James Whitcomb Riley).

DUCKS do remarkably well in Idaho. The climate seems especially adapted to their rapid growth. This might be expected as the state is noted for the fine quality of its wild ducks of which nearly every variety common to North America is found here. The Indian Runner duck is becoming very popular among the poultry breeders of Idaho. It arrives at maturity at an early age and lays a surprising number of eggs. The eggs of Indian Runner ducks are about 25 per cent heavier than the eggs from hens and already the markets of the Coast cities, easily accessible from Idaho, are beginning to realize that the eggs of these ducks are worth more than hen's eggs. Dealers are beginning to inquire for them, as bakers and confectioners esteem them highly on account of their large size and the firmness of the whites. This causes them to pay a better price for the eggs and makes Indian Runners more profitable than almost any other class of poultry.

The ducks in the illustration were hatched June 17, 1912. At one month old they weighed exactly a pound each. Fourteen days later they weighed two pounds and two ounces, a gain of 18 ounces in 14 days. August 17 they weighed exactly three and one-half pounds, which is the standard size for female Indian Runners. Thus it will be seen that they arrived at full weight in two months from the day they were hatched. Such ducks in eastern markets would have been worth about 75 cents each and hotels and restaurants would have taken any number. Such a demand will grow up in the northwest before very long, as "green" Indian Runner ducks are considered a dish for an epicure. The older ducks are the best of all fowls when properly prepared for the table. The flesh is fully as good as that of the famed canvasback of Chesapeake bay, and as soon as this fact becomes widely known there will be a constant demand for Indian Runner ducks of all ages to supply the tables of those who delight in the pleasures of good things to eat. This particular flock of Indian Runners was allowed to spend most of its time in an irrigation ditch from the time they were ten days old. The ditch had a thick growth of young willows, which furnished shade. A low, A-shaped house was set among the willows for them to sleep in. It cost about 20 cents each for the feed they consumed up to the time they weighed three and one-half pounds. They got the remainder of their living along the ditch and in the alfalfa meadow that bordered it.

Pekin and Rouen ducks make enormous size in Idaho. Pekin ducks are sometimes mistaken for small geese by one who is not posted as to the peculiarities of shape in ducks and geese. At the 1912 intermountain fair at Boise, Rouen ducks were shown which would have caused surprised remarks if they had been in an eastern poultry show. In Idaho the old saw about "counting chicks before they are hatched," does not apply in the case of ducks, for it is almost safe to begin counting the ducklings as soon as the eggs are set. The writer got more than 90 per cent hatches from his duck eggs and raised every one that hatched except two, a showing that could not have been made in any other part of the country. Ducks require no shelter in Idaho at any time of the year, except a cheap shed enclosed on three sides to protect them from wind and rain during the night. They are out and enjoying themselves during the daytime every day in the year.



The Dream That Came True

This picture is a pleasant one to look at, for it shows what every beginner in poultry keeping has in his mind as the ideal to which he aspires when his business shall have grown and his profits shall have increased so that he can indulge in buildings that are permanent. His poultry yard will be orchards. Under the shade of the trees his fowls can live in comfort and content. With cloudless skies and pleasant temperatures, every Idaho poultry keeper may reach the place where he can have such an equipment. It shows that his business is prospering. He can have an orchard that brings great profits and a flock of fowls which is even more profitable, all on the same land. It has been said that Idaho is the home of the three greatest geerals on earth: General Peace, General Plenty and General Satisfaction. The owner of the plant shown in this picture is a near neighbor to all these famous generals. His name is General Patch and his home herewith illustrated is located in Canyon county. He is a former college professor who has made good at orcharding and with poultry. He dreamed dreams and had enough good red blood and determination to cause his dreams to come true. It does not require "wealth like a London bank" to reach this condition. A little money, a big ambition, and a capacity to stick to it is all that is necessary.

The owner of such a plant as this need not fear panics or political revolution. The world must eat and he supplies varieties of food products which are absolutely essential to human comfort. Nations may fail but his hens will lay; panics may come but his product is in demand. Food is a three-times-a-day necessity and profits are sure. Poultry keeping is a business that cannot be "cornered." Trusts cannot control it nor can political changes affect it seriously. When one has a poultry plant like this, no one can discharge the owner, nor can anyone depress his market below the profit point.

The Happy Family

Here we have a collection of fowls that about covers the range in their class. White Leghorn hens, Pekin and Indian Runner ducks, White turkeys, White Chinese geese, a wild goose in captivity, White Guinea fowls, all of them plump and perfectly developed, living in luxury in the green alfalfa. In another place we have talked about ducks and these pictured here show for themselves. Compare the size of the Pekin ducks in this picture with the size of the geese and it will be observed that their bodies are not widely separated in weight, the longer legs and necks of the geese being about their only claim to larger size.

Geese thrive in Idaho. The rich alfalfa, tender and nutritious, supplies them with exactly the kind of food they require, and aside from a very little grain, goslings will live and grow big from the time they are four or five weeks old on forage that is found on every Idaho ranch.

Geese are not prolific layers and are kept principally for their flesh. In Idaho raising geese is about the easiest proposition that can be tried. Give them water to drink and alfalfa to graze on and they will do the rest, filling out so rapidly that one is amazed at the way they increase in weight. Geese cost less to rear than any other fowls that can be kept upon the farm, and the market for nice, fat young geese is never glutted. In an irrigated country where clean, running water is always plentiful, geese find a place exactly suited to their requirements. The rearing of geese should become a very important part of the poultry business. Even the wild goose shown here in captivity appears contented. Turkeys, also, find Idaho a congenial home. The sunny days, dry soil, the absence of heavy dews and rains, all work to conduce to the health and thrift of young turkeys. They invariably do well on a minimum of care and may be allowed to range at will almost from the time they are hatched. While insects are not as plentiful in Idaho as they are in most states, a flock of young turkeys allowed to range at will will manage to pick up a fairly good living. It has been found that young turkeys soon neglect the morning feed in favor of what they can find in the fields, coming home in the evening to eat a small feed of grain and keep growing every day. Turkeys in Idaho are not subject to the diseases which have bothered them in the east. Here they are perfectly healthy and as they invariably command a high price at Thanksgiving and Christmas they have proved to be very profitable. Wherever grain is extensively grown turkeys will find their whole living by gleaning the fields, eating fallen and shattered grain and such insects as may infest the ground.

Guinea fowls have for many years been considered more of an odd addition to the poultry yard than as being especially profitable, but within a few years the growing scarcity of game birds has brought them into more prominence and the larger cities now demand them in considerable numbers. In many a city restaurant orders for grouse or pheasant are filled by substituting guinea fowls—a deception that works to the benefit of the consumer, as he gets better than he ordered. Using guinea fowls instead of the scarcer large game birds is an instance where "something just as good" is really a little better. Guinea fowls lay a large number of eggs, are cheerful in their habits, and almost self-supporting.

Idaho Climate

EDWARD L. WELLS, *Section Director, U. S. Weather Bureau.*

IDAHO extends through seven degrees of latitude, or as far as from Indiana to Florida. In altitude it ranges from about 700 feet to more than 12,000 feet. Its northern end lies within the path of the rain areas which pass eastward from the north Pacific ocean, while the southern portion lies well out of that path.

WIDELY DIVERSIFIED CLIMATE

As a result of these complex factors the climate is so diverse as to render description difficult and accurate graphic representation impracticable, hence the accompanying charts of temperature and precipitation should be understood as representing general conditions only, and not as giving in detail the conditions to be found in any particular locality.

The entire state comes under the modifying influence of the equable climate of the north Pacific ocean, and is protected to a large extent from the cold waves that prevail east of the great continental divide, while the chinook winds play an important part in determining the temperature, so that the entire state possesses a milder climate than might be supposed from the altitude and elevation. The normal annual temperature ranges from about 36 degrees in the mountainous interior to about 55 degrees along the middle reaches of the Snake river. This is a range greater than that found in traveling from Bismarck, North Dakota, to St. Louis, Mo.

MILD CLIMATE

The coldest part of the state includes that part of the main range of the Rocky Mountains which forms a portion of the eastern border, together with the sparsely settled elevated regions in the interior and the higher parts of the more important mountain ranges. Here the climate is characterized by cold, snowy winters and short, cool summers. It is sometimes quite warm for a few hours at mid-day in summer, but even in summer the nights are almost cool enough to make a fire enjoyable. In these mountains, above the agricultural sections, practically all the winter precipitation is in the form of snow and occasionally some drifts remain throughout the year. This region thus forms the storehouse of moisure for the many streams of the state, the waters of which are used for irrigation and power, and it also produces valuable timber and furnishes excellent summer grazing. In this section the temperature is about the same as that found in North Dakota.

STOREHOUSE OF MOISTURE

The plateaus and higher valleys, which make up a large part of the central and extreme eastern portions of the state, are somewhat warmer than the mountainous regions already referred to. The winters are cold and the summers are short, but are long enough to enable the staple grains, grasses and vegetables to come to maturity. The normal annual temperature in this section is about the same as that found in parts of Wisconsin.

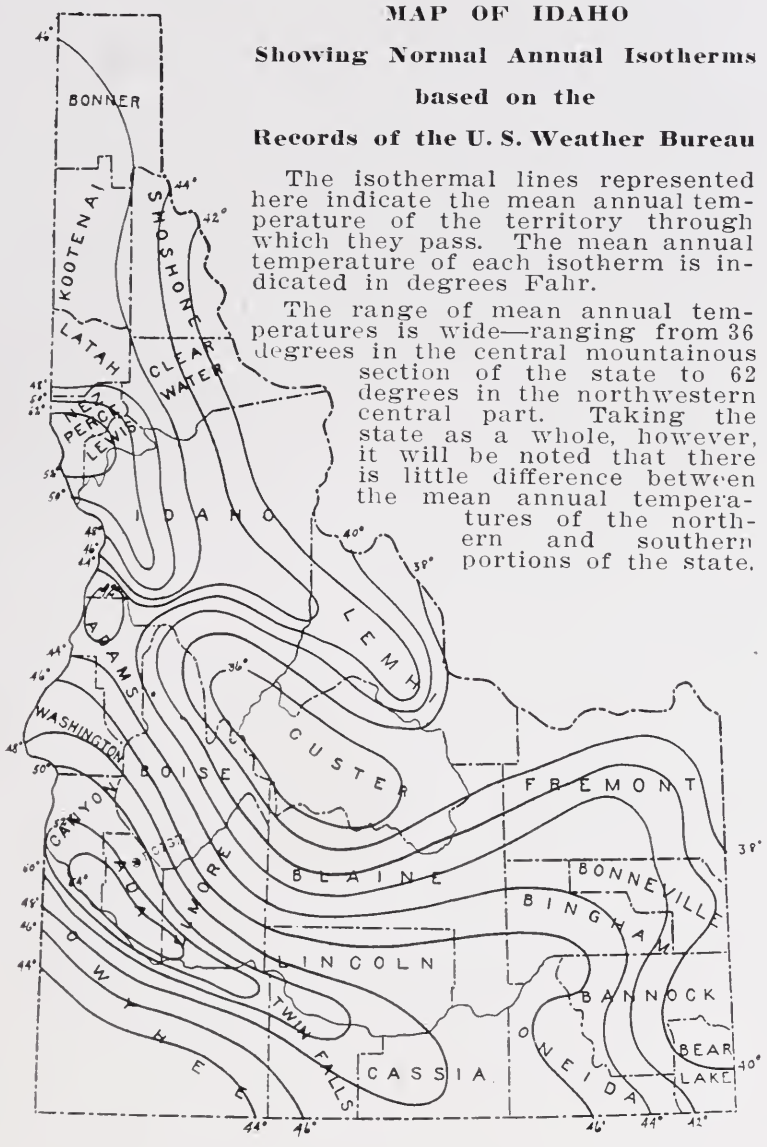
THE SHORT SEASON DISTRICT

The great Snake River plain, together with the lower valleys of the streams that join the Snake during its course across this plain, and a part of the region draining into Great Salt Lake, possess temperature conditions particularly suited to the needs of agriculture. The eastern portion is characterized by moderately cold winters and moderately warm summers, and has a normal annual temperature agreeing closely with that found in central and southern Michigan. The western portion is characterized by mild winters, and by summers in which there are some days of relatively high temperature but in which the nights are usually cool. In this section the normal annual temperature is about the same as that found in central Illinois and northern Missouri.

MODERATE RAINFALL

In the northern end of the state, sometimes known as the "Panhandle," the temperature conditions are somewhat similar to those found in parts of the Snake River Valley, but local differences are quite pronounced. The conditions are particularly favorable for the small grains and timothy and clover, and the common berries, and in places for orchard fruits. The normal annual temperature is about the same as is found in Nebraska and South Dakota.

PANHANDLE COUNTRY



MAP OF IDAHO

Showing Normal Annual Isotherms based on the Records of the U. S. Weather Bureau

The isothermal lines represented here indicate the mean annual temperature of the territory through which they pass. The mean annual temperature of each isotherm is indicated in degrees Fahr.

The range of mean annual temperatures is wide—ranging from 36 degrees in the central mountainous section of the state to 62 degrees in the northwestern central part. Taking the state as a whole, however, it will be noted that there is little difference between the mean annual temperatures of the northern and southern portions of the state.

It should be remembered that in all parts of Idaho the change in temperature from winter to summer is less pronounced than in the states east of the Rocky Mountains. For instance, the normal annual temperature at Lewiston is 53 degrees, which is about the same as that of northeastern Kansas; but the January mean at Lewiston is 34 degrees, which is about the same as at Baltimore, Maryland, while the July mean is 74 degrees, which is very nearly the same as is found at Harrisburg, Pennsylvania.

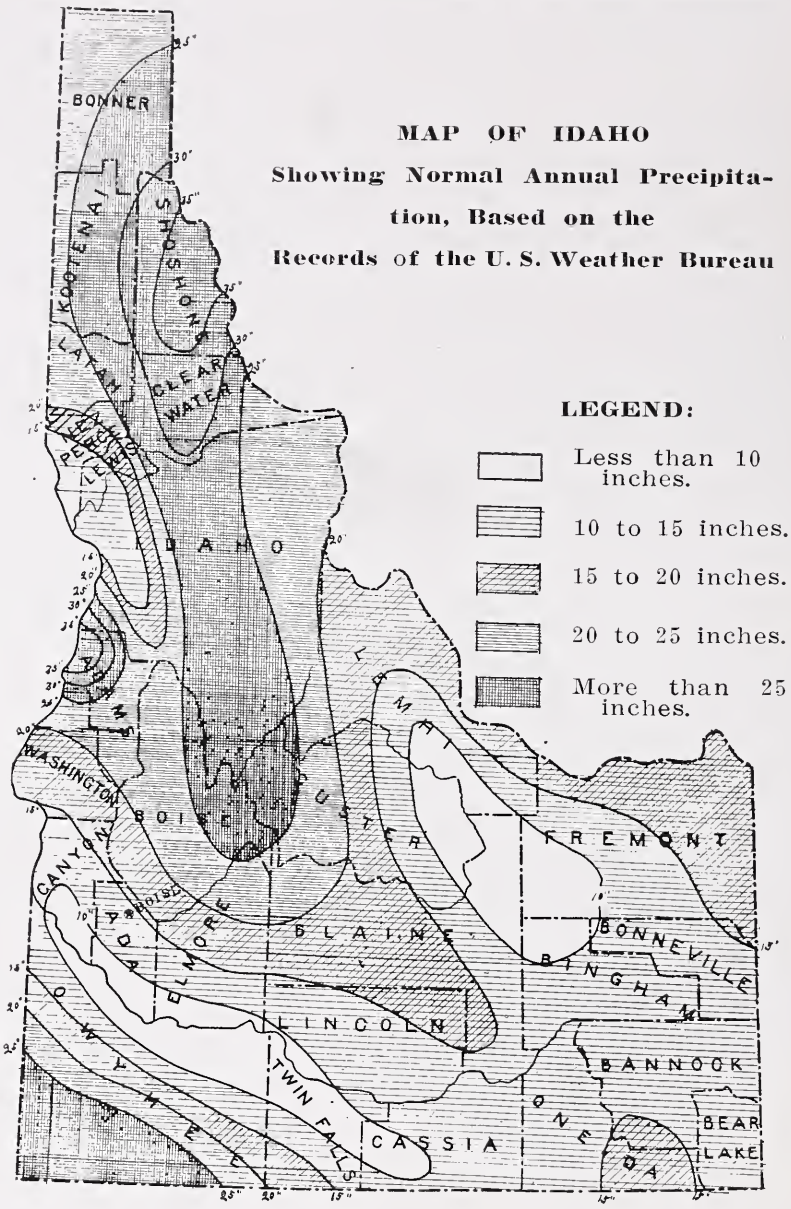
EQUABLE CLIMATE

Some damage is occasionally done by spring frosts, but the period of low temperature is short and conditions are such as to render protective measures highly effective. Uniformly cool nights, together with other conditions, the operation of which is not well understood, render Idaho-grown products somewhat immune from the effects of low temperature, so that even the tender fruit bloom will frequently withstand a temperature considerably below the freezing point. The Weather Bureau is planning a frost-warning service for the fruit belt of Idaho which, with proper co-operation on the part of the growers will render the loss from frost inconsequential. Damage by frost in the fall is a rare occurrence except in the higher altitudes.

NATURAL ADVANTAGES

The diversity in precipitation is quite as pronounced as in the case of temperature. The normal annual precipitation ranges from about 8 inches in part of the Snake River Plain is about 40 inches in the Bitter Root Mountains. This is a range greater than that found in going from Albany, New York, to Phoenix, Arizona. The heaviest precipitation occurs in the mountains, much of it there being in the form of snow. On the Snake River Plain and in the valleys adjacent the rainfall is generally inadequate for growing crops without irrigation, though there are local exceptions, and scientific dry-farming methods are reclaiming a larger acreage every year. Elsewhere there are large areas where irrigation is not

WIDE RANGE OF RAINFALL



necessary. Over much of the State the precipitation is heaviest in November, with a secondary maximum in May. However, in parts of central and eastern Idaho the heaviest rainfall is in May or June, with the secondary maximum ranging from November to March. Practically everywhere the dryest month is July or August. The distribution of precipitation is quite favorable for "dry-farming," while in the case of irrigation by the use of stored water the period of storage is comparatively short, for the climatic conditions are such that the maximum flow of the streams comes in the height of the growing season. The intensity of the rainfall is less than in many other western states, thus lessening the likelihood of damage from floods. It is seldom that more than one inch of rain falls in 24 hours. Another important feature is the regularity of the rainfall. If the normal annual precipitation for a certain place is 20 inches, and in a given year the actual amount is 15 inches, we say that the departure is 5 inches. At Boise the average annual departure for a period of 28 years has been 2.40 inches, or 18% of the normal amount, while at El Paso, Texas, the average annual departure for a period of 39 years was 3.30 inches, or 35% of the normal amount.

WELL DISTRIBUTED RAINFALL

Thunderstorms are light and infrequent. Damage by hail is by no means common. Tornadoes are practically unknown. The average wind movement, where records have been kept, ranges from five and one-half to eight and one-half miles per hour. In Iowa and Nebraska the wind movement averages from eight to nine miles an hour, while the average wind movement at Chicago is about fourteen miles an hour. There is an abundance of sunshine in the growing and ripening season, averaging almost 10 hours a day at Boise during July.

TORNADOES PRACTICALLY UNKNOWN

It is suggested that persons desiring more detailed information than can be given in this article may obtain it by calling at the nearest local office of the Weather Bureau or addressing the local office of the Weather Bureau at Boise.

The following tables show the mean average for a series of years:

Station	County	Elevation	MEAN TEMPERATURE												AVERAGE PRECIPITATION											
			January	February	March	April	May	June	July	August	September	October	November	December	Year	January	February	March	April	May	June	July	August	September	October	November	December	Year
Am. Falls	Oneida	4341	25	27	36	45	53	61	69	68	58	46	35	25	46	1.6	1.2	1.6	1.4	1.6	1.0	0.5	0.4	0.7	1.0	1.3	1.3	13.4
Blackfoot	Bingham	4503	23	26	36	45	53	62	68	67	58	46	34	24	45	1.0	0.8	1.0	0.9	1.5	0.8	0.5	0.7	0.5	1.1	0.9	0.9	10.5
Boise	Ada	2739	29	34	42	50	58	66	73	72	62	50	40	32	51	1.9	1.4	1.4	1.2	1.3	0.9	0.2	0.2	0.4	1.3	0.9	1.7	12.7
Bon'rs F'ry	Bonner	1850	24	28	38	45	52	59	65	62	56	47	35	26	45	2.6	1.5	1.0	1.1	1.9	2.0	1.1	1.2	1.8	1.5	3.3	1.9	20.8
Cambridge	Washington	2651	23	27	38	49	56	64	72	71	60	49	38	26	48	3.5	2.2	2.0	1.3	1.6	1.0	0.3	0.4	0.6	1.2	2.5	3.2	20.0
Coeur d'Ale.	Kootenai	2157	26	29	38	47	55	61	67	67	57	47	36	32	47	3.7	2.3	2.3	1.8	1.8	1.3	0.7	0.5	1.4	1.8	3.7	3.6	25.0
Driggs	Fremont	6097	17	16	27	37	45	54	61	58	52	41	28	15	38	2.3	1.0	1.3	0.9	2.5	2.4	0.8	1.1	1.1	1.5	1.3	1.5	17.8
Grangev'le	Idaho	3500	30	32	36	45	50	57	67	67	54	48	38	30	46	2.2	1.6	3.3	2.6	3.5	3.4	1.2	0.9	2.1	2.6	2.8	1.6	27.8
Guffey	Owyhee	2381	32	36	47	53	59	69	78	75	65	54	44	32	54	1.4	0.8	0.6	1.2	1.0	1.0	0.3	T	0.8	0.8	1.5	0.8	10.2
Hailey	Blaine	5347	21	24	30	43	53	60	68	67	56	47	36	21	44	3.6	1.8	2.1	1.0	1.5	0.6	0.4	0.1	0.9	1.0	1.3	1.6	16.4
Idaho City	Boise	4000	25	29	34	44	54	59	66	66	56	48	37	26	45	2.3	2.9	2.3	1.4	1.8	0.7	0.6	0.4	0.7	2.1	2.9	3.1	20.8
Idaho Falls	Bonneville	4742	19	21	33	44	52	59	68	67	57	45	32	22	43	1.7	1.2	1.7	1.1	1.6	1.4	0.5	0.7	0.8	1.1	1.1	1.2	14.2
Kellogg	Shoshone	2305	26	31	39	45	51	58	66	62	56	46	36	29	46	3.7	3.2	2.3	1.7	3.4	2.2	0.8	0.9	1.6	2.8	4.9	2.7	29.7
Lewiston	Nez Perce	757	34	36	44	53	61	69	74	74	64	52	41	38	53	1.6	1.3	1.3	1.1	1.6	1.0	0.4	0.4	0.6	1.2	1.3	1.5	13.5
Mackay	Custer	5897	17	18	31	41	48	57	67	64	54	43	31	18	41	1.1	0.4	0.2	0.2	1.1	1.2	0.9	0.3	1.4	0.6	0.4	0.3	8.1
Meadows	Adams	3950	22	28	35	44	50	56	64	63	54	45	34	23	43	3.4	2.5	2.2	1.5	1.8	2.0	0.8	0.4	1.0	1.8	3.3	2.2	23.0
Moscow	Latah	2748	29	32	38	46	53	59	67	65	57	49	38	32	47	2.7	2.2	1.9	1.4	2.5	1.3	0.8	0.8	1.2	1.6	3.3	2.5	22.2
Mt. Home	Elmore	3150	29	33	41	48	54	63	72	68	60	51	39	30	49	2.0	1.3	1.1	0.8	0.9	1.0	0.6	0.2	0.5	0.9	1.6	1.4	12.3
Nez Perce	Lewis	3082	27	28	38	45	51	58	63	60	54	47	36	28	45	2.1	1.5	1.1	3.2	4.0	1.8	1.2	0.6	1.8	1.5	2.8	1.2	22.6
Oakley	Cassia	4700	29	31	38	47	53	62	71	69	60	50	39	30	48	1.0	0.8	1.0	0.9	1.2	0.9	0.4	0.6	0.8	0.8	0.8	0.5	9.7
Oro Fino	Clearwater	1027	28	35	43	51	56	63	71	68	61	50	43	32	50	3.0	3.4	3.1	1.9	2.8	2.3	1.0	0.5	1.8	1.9	4.6	3.1	28.6
Paris	Bear Lake	5946	20	19	28	40	49	56	63	63	55	45	34	21	41	1.6	1.2	1.3	1.2	1.3	0.7	0.6	0.8	0.9	0.9	1.2	1.0	12.9
Payette	Canyon	2159	29	34	42	52	59	66	74	72	62	51	40	31	51	1.7	1.4	1.2	0.8	1.2	0.7	0.3	0.2	0.6	0.8	1.2	1.4	11.4
Pocatello	Bannock	4483	25	28	37	47	56	64	71	70	61	48	36	28	48	0.7	0.8	1.8	2.0	2.2	1.0	0.6	0.6	0.9	1.0	0.6	0.9	12.9
Salmon	Lemhi	4040	17	24	34	45	52	60	67	63	56	44	32	19	43	0.9	0.5	0.5	0.8	1.1	1.7	0.8	0.7	1.0	0.9	1.2	0.8	10.8
Shoshone	Lincoln	3968	25	27	40	46	52	61	70	67	59	47	36	26	46	2.7	1.4	0.5	0.6	1.1	0.6	0.2	0.1	0.5	0.8	2.4	1.1	12.0
Sugar	Fremont	4892	19	20	32	42	49	59	65	61	54	43	33	19	42	1.2	1.0	0.7	0.6	2.5	1.6	0.5	0.5	1.4	1.7	1.0	1.2	14.2
Twin Falls	Twin Falls	3825	27	32	40	47	54	61	71	67	60	49	37	29	48	1.8	1.2	1.3	0.6	1.1	1.2	0.4	0.2	0.6	0.8	1.4	1.2	12.0
Weston	Oneida	4410	25	26	37	46	52	61	68	67	58	47	36	24	46	1.6	1.3	1.9	1.5	2.3	1.0	0.6	1.0	0.9	1.2	1.4	1.1	15.7

CLIMATOLOGICAL SCHEDULE FOR THE STATE OF IDAHO BY COUNTIES FOR 1911.

Counties	Stations	Elevation	Temperature		Precipitation		Number of rainy days	Number of clear days
			Highest	Lowest	Total	Snow fall		
Ada	Boise	2739	99	6	15.35	29.2	91	147
Ada	Pleasant Valley	3000	101	0	12.04	31.9	81	222
Adams	Landore	5300	92	—6	31.68	255.4	128	.....
Bannock	Grace	5400	94	—12	15.36	25.7	58	180
Bannock	Pocatello	4483	94	—6	18.48	40.7	106	152
Bear Lake	Paris	5946	89	—30	.....	.....	.....	.....
Bingham	Blackfoot	4503	93	—9	14.42	44.1	76	155
Bingham	Springfield	4420	98	—10	14.32	46.2	67	142
Boise	Roseberry	4872	92	.....	.....	.....	.....	.....
Blaine	Hailey	5347	96	—11	17.47	116.6	78	161
Bonneville	Idaho Falls	4742	93	—13	17.88	67.4	103	191
Bonner	Bonners Ferry	1850	97	—10	.....	.....	.....	129
Bonner	Porthill	1665	93	—8	15.32	.....	81	166
Bonner	Sandpoint	2086	94	—8	23.56	.....	87	.....
Canyon	Caldwell	2372	99	—2	9.95	31.9	62	135
Canyon	Emmett	2350	102	3	.....	22.6	.....	.....
Canyon	Payette	2159	104	—3	9.74	29.2	60	180
Cassia	Oakley	4700	99	—7	11.21	15.0	50	150
Clearwater	Dent	1350	103	2	.....	.....	.....	.....
Clearwater	Orofino	1027	104	5	25.99	67.4	116	120
Custer	Mackay	5897	100	—14	.....	.....	.....	.....
Custer	Pierson	7000	88	—29	.....	106.0	.....	236
Elmore	Garnet	2575	105	10	9.58	.....	44	.....
Elmore	Mountainhome	3150	100	—7	.....	.....	.....	.....
Elmore	Sunnyside	3500	101	0	.....	.....	.....	.....
Fremont	Driggs	6097	89	—39	16.15	80.7	65	130
Fremont	Sugar	4892	90	—19	12.28	29.5	.....	.....
Fremont	Vernon	5050	90	—22	19.83	83.5	74	161
Idaho	Kooskia	1261	101	6	.....	.....	.....	.....
Kootenai	St. Maries	2263	95	—4	.....	75.8	.....	.....
Latah	Moscow	2748	99	—1	.....	.....	.....	.....
Lemhi	Forney	6000	93	—21	10.85	74.8	44	105
Lemhi	Salmon	4040	93	.....	.....	.....	.....	.....
Lewis	Nez Perce	3082	95	—10	.....	79.2	.....	.....
Lincoln	Gooding	3572	98	—5	11.43	39.4	64	195
Lincoln	Rupert	4204	94	—12	11.87	40.7	76	238
Lincoln	Shoshone	3968	91	—8	12.87	54.0	65	.....
Lincoln	Wendell	3400	102	0	12.76	23.9	55	191
Nez Perce	Culdesac	1520	105	6	18.01	26.2	.....	181
Nez Perce	Lewiston	757	106	16	9.06	11.7	93	125
Oneida	American Falls	4341	96	—6	.....	.....	.....	.....
Oneida	Weston	4460	94	—12	17.45	43.0	73	191
Owyhee	Grandview	.....	101	0	.....	.....	.....	.....
Owyhee	Guffey	2381	105	6	9.68	16.6	87	225
Owyhee	Hotspring	2752	102	4	12.47	.....	49	188
Shoshone	Grand Forks	3000	92	—14	.....	.....	.....	.....
Shoshone	Kellogg	2305	95	—6	27.62	79.4	131	162
Shoshone	Wallace	2728	95	—4	37.15	.....	160	.....
Twin Falls	Buhl	3800	102	—4	.....	21.0	.....	.....
Twin Falls	Milner	4110	98	—2	.....	.....	.....	.....
Twin Falls	Murtaugh	.....	93	—10	.....	34.1	57	.....
Twin Falls	Twin Falls	3825	98	—5	11.46	.....	71	133
Washington	Cambridge	2651	102	—5	.....	.....	.....	.....

AGRICULTURAL STATISTICS SHOWING PRINCIPAL CROP PRODUCTION FOR 1912 SEASON.

County	Area Acres	Wheat			Oats			Barley			Corn		
		Acres	Avr.	Production	Acres	Avr.	Production	Acres	Avr.	Production	Acres	Avr.	Production
Ada	746,800	8,200	28.	229,600	10,381	42.	436,002	1,156	28.	32,368	90	35.	3,150
Adams	926,400	8,945	24.	214,680	1,830	39.	71,370	2,511	25.	62,775	36	22.	792
Bannock	2,079,700	57,641	17.	979,897	10,644	32.	340,608	2,848	24.	68.352	92	20.	1,840
Bear Lake	576,700	9,897	20.	197,940	7,235	38.	274,930	497	27.	13,419	.....	....	.....
Bingham	1,512,500	20,267	27.	547,209	16,315	46.	750,490	1,768	36.	63,648	.....	....	.....
Blaine	3,450,500	9,102	24.	218,448	13,195	38.	501,410	1,999	25.	49,975	24	25.	600
Boise	2,325,500	13,428	30.	402,840	8,974	36.	323,064	1,970	21.	41,370	81	22.	1,782
Bonner	2,174,300	1,222	25.	30,550	396	48.	19,008	.....	....	.....	21	26.	546
Bonneville	1,238,400	15,307	30.	459,210	11,294	46.	519,524	1,445	36.	52,020	.....	....	.....
Canyon	860,300	11,252	28.	315,056	9,852	41.	408,935	1,824	27.	49,248	980	37.	42,661
Cassia	1,701,600	17,924	20.	358,480	8,120	49.	396,880	1,638	29.	47,502	51	26.	1,326
Clearwater	1,644,900	8,800	33.	290,400	3,157	40.	126,280	6,679	37.	247,123	54	30.	1,620
Custer	2,977,800	1,924	23.	44,252	4,634	32.	148,288	258	29.	7,482	.....	....	.....
Elmore	1,805,600	1,659	20.	33,180	1,859	34.	63,206	261	18.	4,698	104	16.	1,664
Fremont	3,998,800	46,745	30.	1,402,350	97,186	38.	3,693,068	4,223	26.	109,798	412	29.	11,848
Idaho	7,222,400	59,042	33.	1,948,386	18,906	46.	869,676	44,000	38.	1,672,000	346	30.	13,840
Kootenai	1,389,700	9,735	30.	292,050	16,489	42.	692,538	96	38.	3,648	288	28.	8,064
Latah	727,900	56,760	36.	2,043,360	45,299	43.	1,947,857	4,230	34.	143,820	2,288	35.	80,080
Lemhi	3,110,200	1,558	30.	46,740	3,544	40.	141,760	158	31.	4,898	78	35.	2,730
Lewis	312,000	38,940	33.	1,285,020	14,097	41.	577,977	31,120	37.	1,151,440	68	30.	2,040
Lincoln	2,164,800	13,677	25.	341,925	12,943	34.	440,062	794	22.	17,468	364	35.	12,740
Nezperce	557,800	30,800	33.	1,016,400	11,277	42.	473,634	25,933	37.	959,521	3,820	31.	118,420
Oneida	1,730,000	74,392	20.	1,487,840	6,595	42.	276,990	5,056	21.	106,176	163	26.	4,238
Owyhee	5,152,100	2,720	30.	81,600	1,886	46.	86,756	308	36.	11,088	10	30.	300
Shoshone*	1,682,700	.....	.....	.....	.....	....	.....	.....	....	.....	.....	....	.....
Twin Falls	1,238,400	38,543	32.	1,233,376	30,477	44.	1,340,988	922	28.	25,816	459	25.	11,475
Washingt'n	964,200	15,892	24.	381,408	2,625	38.	99,750	3,069	25.	76,725	378	26.	9,828
Totals	54,272,000	574,372	27.6	19,882,197	369,210	40.67	15,016,048	144,763	34.7	5,022,378	10,207	32.48	331,584

*Entirely mining and timber. Average and production are shown in bushels except with hay, which is shown in tons.

AGRICULTURAL STATISTICS, 1912—(Continued).

County	Area Acres	Rye			Alfalfa Hay			Other Hays			Potatoes		
		Acres	Avr.	Production	Acres	Avr.	Production	Acres	Avr.	Production	Acres	Avr.	Production
Ada	746,800	954	11.	10,494	16,327	3.9	63,675	9,201	2.8	25,762	918	176.	161,568
Adams	926,400	36	14.	504	10,078	2.85	28,722	11,340	2.3	26,082	127	136.	17,272
Bannock	2,079,700	404	17.	6,868	25,551	2.85	72,820	27,493	2.2	60,484	1,821	180.	327,780
Bear Lake	576,700	79	23.	1,817	9,824	2.55	25,051	41,822	2.2	92,008	656	146.	30,176
Bingham	1,512,500	325	18.	5,850	28,026	3.5	98,091	5,699	2.3	13,107	5,254	208.	1,092,832
Blaine	3,450,500	15	15.	225	20,332	2.8	56,929	17,438	1.8	31,388	533	156.	83,148
Boise	2,325,500	38	17.	646	3,773	2.	7,546	20,081	1.8	36,145	449	132.	59,268
Bonner	2,174,300	....	....	.....	20	2.5	50	18,722	2.3	43,060	768	126.	96,768
Bonneville	1,238,400	210	18.	3,780	22,932	3.5	80,262	6,964	2.3	16,017	5,880	210.	1,234,810
Canyon	860,300	1,225	12.	14,700	38,610	4.5	173,745	6,017	2.8	16,847	2,202	124.	273,048
Cassia	1,701,600	37	11.	407	17,247	3.2	55,190	10,110	2.3	23,253	2,350	160.	376,000
Clearwater	1,644,900	45	20.	900	460	2.	920	22,883	1.9	43,477	211	142.	29,962
Custer	2,977,800	....	....	.....	5,496	1.9	10,442	14,131	1.6	22,096	214	175.	37,450
Elmore	1,805,600	42	12.	504	5,489	3.9	21,407	10,652	2.1	22,369	382	119.	45,458
Fremont	3,998,800	66	14.	924	54,660	3.	163,980	38,897	2.	77,794	3,928	195.	765,960
Idaho	7,222,400	35	21.	735	2,135	3.	6,405	45,495	2.3	104,638	948	139.	131,772
Kootenai	1,389,700	543	16.	8,688	93	2.	186	29,408	2.4	70,579	2,212	111.	245,532
Latah	727,900	....	....	.....	1,604	1.5	2,406	40,898	2.2	89,975	1,720	158.	271,760
Lemhi	3,110,200	....	....	.....	3,286	2.3	7,557	22,124	2.	44,248	544	161.	87,584
Lewis	312,000	36	17.	612	1,076	2.	2,152	18,553	1.9	35,250	703	143.	100,529
Lincoln	2,164,800	2,208	14.	30,912	44,926	3.8	170,718	5,241	2.5	13,102	4,230	155.	655,650
Nezperce	557,800	87	20.	1,740	1,537	2.2	3,381	10,308	2.1	21,646	1,265	167.	211,255
Oneida	1,730,000	51	17.	867	32,861	3.1	101,869	10,202	2.2	22,444	1,520	150.	228,000
Owyhee	5,152,100	36	19.	684	13,384	3.8	50,859	13,812	2.3	31,767	189	150.	28,350
Shoshone*	1,682,700	....	....	.....	.....	.....	.....	....	....	.....	.....	.....	.....
Twin Falls	1,238,400	141	13.	1,833	57,234	4.9	280,446	6,728	2.7	18,165	6,676	214.	1,328,564
Washingt'n	964,200	144	20.	2,880	20,614	3.7	76,271	7,130	2.3	16,399	493	133.	65,569
Totals	54,272,000	6,757	14.29	96,570	437,575	3.56	1,561,080	471,349	2.16	1,018,102	46,193	172.8	7,986,065

*Entirely mining and timber.

TABLE SHOWING THE VALUE OF THE PRINCIPAL 1912 SURPLUS PRODUCTS OF IDAHO

Wheat	15,882,197 bu.	$12,705,757.00		
Oats	15,016,048 bu.	6,006,419.00		
Barley	5,022,378 bu.	2,109,398.00		
Corn	331,584 bu.	225,477.00		
Rye	96,570 bu.	38,628.00		$ 21,085,679.00
Potatoes	7,986,065 bu.			3,593,179.00
Alfalfa and other hay	2,579,182 tons			14,966,041.00
Sugar Beets	186,500 tons			932,500.00
Alfalfa seed	465,007 lbs.	55,800.00		
Timothy seed	2,100,000 lbs.	105,000.00		
Clover seed	435,248 lbs.	52,229.00		213,029.00
Peas		725,000.00		
Beans		210,000.00		
Onion seed and sets		17,000.00		952,000.00
Fruits				2,926,900.00
Poultry and poultry products				2,243,828.00
Bees and honey				210,626.00
Mining				23,500,000
Lumber				11,346,000.00
Horses shipped	10,700	$ 1,177,000.00		
Cattle shipped	57,300	4,011,000.00		
Hogs shipped	106,000	1,272,000.00		
Wool shipped	22,275,000 lbs.	3,564,000.00		
Sheep shipped	2,360,800	7,082,400.00		17,106,400.00
Total				$99,076,182.00

RECAPITULATION

Recapitulation of acreage and assessed valuations of each classification of patented land in Idaho, and grand total of all patented lands for year 1912.

	Number of Acres in Idaho.	Valuation
Irrigated and Agricultural Land	2,072,090.83	$100,631,021.02
Dry Farm Land	810,612.12	17,064,362.95
Natural Meadow and Pasture	645,727.03	6,602,469.55
Grazing Land	1,056,574.44	8,109,049.92
Desert, Waste and Swamp	461,571.17	2,382,486.53
Mineral Land	61,186.98	277,663.59
Standing Timber	1,711,362.00	25,518,541.95
Cut-over and Burnt Timber Land	601,158.00	4,479,942.40
Suburban Land	30,057.85	6,635,926.00
Orchard and Vineyard	29,059.76	6,021,109.00
TOTAL	7,479,400.18	$177,722,572.91

Assessable land in Idaho will increase very rapidly from now on, as considerable areas are in process of patent under the U. S. R. S. projects. Carey Act entrymen are also acquiring title.

There are 734,880.74 acres of land entered under the Carey Act but only 193,892.87 acres have as yet been patented to the entrymen. Final proof has been made upon more than one-half of the Carey Act entries, amounting to 453,902.66 acres. Patent will issue within a year after final proof is offered, generally.

The amended Homestead Law, permitting patent to mature at the end of three years' time instead of five years' time, as was the law previously, facilitates matters for the homesteader.

The land classified above as "dry farm land" does not represent more than a portion of the land that is being farmed under dry farm methods in the state. A large amount of state land is being farmed upon a lease basis. Only the improvements are assessable, in such instances.

State lands are sold upon long time payments. Only that portion of the purchase price paid in, as shown by the certificate of record, is assessable. Title remains with the state until final payment is made. The certificate of sale is negotiable and is recorded much the same as a deed, however.

Land is not assessed as orchard land until the trees have been set four years. Therefore, the acreage shown above does not represent all of the growing orchards and vineyards in the state.

There are several hundred thousand acres of land that are now improved and productive farm land where application for patent has not yet been made. So long as title does not issue from the government, taxes can be assessed only upon the improvements.

The lands contained within the National Forests yield a revenue amounting to from $50,000 to $60,000 per annum that accrues to the benefit of the counties wherein the forests are located. This fund accumulates through the provision of the federal law which distributes 25% of the gross fees collected as grazing charges and other income. This fund is distributed for the benefit of the road and schools funds in the respective counties.

Table showing the total acreage, acreage by counties, total assessed valuation, and assessed valuation by counties, of all the patented lands in Idaho in 1912. The acreage is taken from the abstracts of the county assessment rolls on file in the office of the state auditor, while the valuations are those fixed by the State Board of Equalization.

COUNTY	Irrigated and Agricultural Land, Acres	Valuation.	Dry Farm Land, Acres	Valuation.	Natural Meadow and Pasture, Acres	Valuation.	Grazing Land, Acres	Valuation.	Desert, Waste and Swamp Land, Acres	Valuation.
Ada	70564.79	$ 9131937.50	20108.80	$ 295888.80	1546.85	$ 70704.80	4514.32	$ 63185.00	23384.81	$ 230423.60
Adams	28349.00	1285077.20	19149.00	256088.80	4676.00	68282.50	19770.00	122046.00	4774.00	16215.00
Bannock	53715.00	2682031.00	128963.00	2659440.00	30754.00	626975.00	96344.00	746325.00	19126.00	47333.75
Bear Lake	42094.00	1215093.75	25629.00	300151.50	36926.00	556188.00	30400.00	246760.00	500.00	1215.00
Bingham	122507.00	6647856.38	23943.00	375015.00	8472.00	125097.00			18496.00	46240.00
Blaine	50888.00	1840247.00	21665.00	495684.00	57504.00	623679.00	67785.00	966505.50	16875.00	56776.00
Boise	8330.00	643015.00	70121.00	2426748.30	779.00	9718.00	80733.00	404939.00		
Bonner	45776.00	1048956.70							80473.00	532460.00
Bonneville	93828.00	5126786.34	31796.00	483150.00	10323.00	145093.50			8733.00	21832.50
Canyon	134696.22	11171162.00	15332.12	224185.00	28149.84	489920.00	33288.00	451776.70	75769.36	396482.00
Cassia	42311.00	1322319.60	18538.00	198840.60	12746.00	151494.00	20215.00	127053.60	4531.00	10334.40
Clearwater	24145.00	630021.00					57013.00	283986.15		
Custer	21111.00	552378.00			17566.00	198096.00			20116.00	86648.00
Elmore	21341.00	757398.45	2829.00	50302.50			18055.00	198784.50	16020.00	101041.00
Fremont	192321.00	8717356.50	87765.00	2146346.40	24550.00	350484.00	79806.00	663281.00	73575.00	183937.50
Idaho	147055.00	5020422.00					272338.00	2249424.00		
Kootenai	11129.00	1051007.00	77644.00	2355336.85			19502.00	170713.40		
Latah	188681.00	7364863.00			193476.00	950518.10				
Lemhi	27519.00	933134.40			21418.00	317486.40	18004.00	123698.30	10715.00	23860.00
Lewis	107776.00	4625576.00					60106.00	332329.00		
Lincoln	208554.00	7354519.00	2068.00	13690.00	5566.00	65660.00			29450.00	170452.00
Nez Perce	131825.00	5661765.00			146416.00	1239830.00				
Oneida	12632.00	757920.00	216320.00	3907172.00			111910.00	308080.00		
Owyhee	27144.43	1290723.00			30734.34	449593.00			31586.00	277798.80
Shoshone	7142.00	99570.00			11507.00	133755.00				
Twin Falls	216100.00	10538083.20	4970.00	30780.00	1680.00	10631.25	13630.00	79368.75	6215.00	39958.00
Washington	34511.39	3161802.00	43771.20	845543.20	937.00	19264.00	53161.12	570794.00	21250.00	139479.00
TOTALS	2072090.83	$100631021.02	810612.12	$17064362.95	645727.03	$6602469.55	1056574.44	$8109049.90	461571.17	$2382486.55

Table showing the total acreage, acreage by counties, total assessed valuation, and assessed valuation by counties, of all the patented lands in Idaho in 1912—Continued.

COUNTY	Mineral Land, Acres	Valuation.	Standing Timber, Acres	Valuation.	Cut-over and Burnt Timber Land, Acres	Valuation.	Suburban Land, Acres	Valuation.	Orchard and Vineyard, Acres	Valuation.	Total Acreage Patented Lands	Total Valuation, Patented Lands
Ada						$	12769.02	$4723935	1650.17	$ 389350	134538.76	$ 14905424.70
Adams	1638.00	$ 6235.00	92361	$ 1349562.50	4208	24235.20			88.00	8625	175061.00	3136367.20
Bannock											328902.00	6762104.75
Bear Lake											135549.00	2319408.25
Bingham									167.00	22050	173585.00	7216258.38
Blaine	7864.00	39326.00									222563.00	4022217.50
Boise	1359.00	4857.00	186920	2243587.20	15577	89091.60					363819.00	5821956.10
Bonner	120.00	550.00	360629	5785131.00	237543	2213804.60					724541.00	9580902.30
Bonneville											144680.00	5776862.34
Canyon							14404.83	14304.20	19812.19	3495932	321452.56	17659877.70
Cassia											98341.00	1810042.20
Clearwater	885.00	6900.00	400051	6105657.00	27475	132845.00					509569.00	7159409.15
Custer	1777.50	10665.00									60570.50	847787.00
Elmore	381.00	1607.94	7713	78432.00					172.00	18065	66511.00	1205631.39
Fremont											458017.00	12061405.40
Idaho	7068.00	30140.00									426461.00	7299986.00
Kootenai			291948	4017190.00	221802	1570198.00	2884.00	481571	279.00	22357	625188.00	9668373.25
Latah			180866	2470915.00							563023.00	10789296.10
Lemhi	10527.00	37505.00	520	3400.00					121.00	4320	88824.00	1443404.10
Lewis			39941	846520.00	5667	69188.00					213490.00	5873613.00
Lincoln									212.00	20695	245850.00	7625016.00
Nez Perce			24223	254905.00					6471.00	2025695	308935.00	9182195.00
Oneida											340862.00	4973172.00
Owyhee	2513.48	12647.65							87.40	14020	92065.65	2044782.45
Shoshone	27054.00	126830.00	126187	2363242.25	88886	380580.00					260776.00	3103977.25
Twin Falls											242595.00	10698821.20
Washington		400.00									153630.71	4737282.20
TOTALS	61186.98	$227663.59	1711362	$25518541.95	601158	$4479942.40	26177.85	$6635926	29059.76	$6021109	7479400.18	$177772572.91

NEWSPAPERS AND PERIODICALS.

THE large number of newspapers and periodicals published and circulated in Idaho is indicative of the high degree of education of the people of the state. A total of 155 publications were printed within the state in December, 1912, an increase of 25 since 1909 and of 82 since 1899. Of these, 11 are daily newspapers and 133 are weekly.

The newspapers have done excellent service for the commonwealth. The editor keeps in close touch with his readers and promptly heralds their successes, which constitute a considerable portion of the community history.

NEWSPAPER STATISTICS.

Class	Number of Publications			
	1912	1909	1904	1899
Daily	11	13	6	5
Sunday	3	3	3	1
Semi-weekly	5	(1) 6	(1) 10	5
Weekly	133	108	74	59
All other classes	3		2	3
Total	155	130	95	73

(1)—Includes one tri-weekly publication.

NEWSPAPERS AND PERIODICALS OF IDAHO.

TOWN	NAME OF PUBLICATION	ISSUED
Aberdeen	Times	Wednesday
Albion	Nugget	Friday
American Falls	Press	Thursday
Arco	Advertiser	Friday
Ashton	Enterprise	Thursday
Bancroft	Dry Farmer	Friday
Bellevue	Gate City Times	Friday
Blackfoot	Optimist	Monday-Thursday
Blackfoot	Republican	Friday
Bliss	Times	Friday
Boise	Idaho Statesman	Daily
Boise	Capital News	Daily
Boise	Idaho Clubwoman	Monthly
Boise	Intermountain Farmer	Weekly
Boise	Illustrated Idaho	Monthly
Bonners Ferry	Herald	Friday
Bruneau	Owyhee Nugget	Thursday
Buhl	Herald	Thursday
Burley	Bulletin	Friday
Caldwell	Tribune	Friday
Caldwell	News	Thursday
Caldwell	Idaho Odd Fellow	Monthly
Caldwell	Blab	Monday
Caldwell	Gem State Rural	Monthly
Cambridge	News	Thursday
Challis	Messenger	Tuesday
Clark Fork	Times	Friday
Coeur d'Alene	Journal	Tuesday-Friday
Coeur d'Alene	Press	Daily
Coeur d'Alene	Kootenai Democrat	Friday
Council	Leader	Friday
Cottonwood	Camas Prairie Chronicle	Friday
Culdesac	Enterprise	Thursday
Deary	Enterprise	Friday
Downey	Idahoan	Friday
Driggs	Teton Valley News	Thursday
Elk River	Sentinel	Weekly
Elk City	Mining News	Thursday
Emmett	Index	Thursday
Emmett	Examiner	Thursday
Filer	Journal	Thursday
Genesee	News	Friday
Glenns Ferry	Gazette	Friday
Gooding	Idaho Leader	Friday
Gooding	Herald	Thursday
Grangeville	Idaho County Free Press	Thursday
Grangeville	Globe	Thursday
Hagerman	Hagerman Valley Sun	Friday
Hailey	Wood River Times	Daily
Hailey	News-Miner	Daily

TOWN	NAME OF PUBLICATION	ISSUED
Harrison	Searchlight	Friday
Heyburn	South Idaho Review	Wednesday
Hollister	Herald	Friday
Ilo	Lewis County Register	Friday
Idaho City	Idaho World	Friday
Idaho Falls	Idaho Register	Tuesday-Friday
Idaho Falls	Post	Daily
Idaho Falls	Times	Monday
Jerome	North Side News	Thursday
Jerome	Lincoln County Times	Weekly
Kamiah	Progress	Friday
Kellogg	Record	Thursday
Kellogg	News	Wednesday
Kendrick	Gazette	Friday
Kooskia	Mountaineer	Friday
Leadore	Standard	Saturday
Lewiston	Tribune	Daily
Mackay	Miner	Thursday
McCammon	Junction City News	Weekly
Malad	Idaho Enterprise	Thursday
Meadows	Eagle	Friday
Meridian	Times	Friday
Midvale	Reporter	Thursday
Middleton	Herald	Thursday
Montpelier	Examiner	Friday
Moscow	Idaho Post	Friday
Moscow	Star-Mirror	Daily
Moscow	University Argonaut	Tuesday
Mountainhome	Elmore County Republican	Saturday
Mountainhome	New Time	Friday
Mullan	Progress	Friday
Nampa	Leader-Herald	Tuesday-Friday
Nampa	Record	Friday
New Meadows	Tribune	Thursday
New Plymouth	Sentinel	Thursday
Nezperce	Herald	Thursday
Oakley	Herald	Friday
Orofino	Clearwater Republican	Thursday
Orofino	Tribune	Friday
Paris	Post	Friday
Parma	Herald	Thursday
Parma	Review	Friday
Payette	Independent	Thursday
Payette	Enterprise	Thursday
Peck	Reporter	Friday
Pocatello	Tribune	Daily
Pocatello	Chronicle	Weekly
Post Falls	Advance	Friday
Preston	Booster	Thursday
Preston	News	Thursday
Rathdrum	Tribune	Friday
Rexburg	Current Journal	Friday
Rexburg	Standard	Tuesday
Richfield	Recorder	Thursday
Rigby	Star	Thursday
Rockland	Times	Saturday
Roberts	Sentinel	Weekly
Reubens	Citizen	Thursday
Rupert	Pioneer Record	Thursday
Roseberry	Long Valley Advocate	Thursday
St. Anthony	Fremont County News	Thursday
St. Anthony	Teton Peak Chronicle	Thursday
St. Maries	Gazette	Friday
Salmon	Lemhi Herald	Thursday
Salmon	Idaho Recorder	Thursday
Sandpoint	Pend d'Oreille Review	Friday
Sandpoint	North Idaho News	Tuesday
Shelley	Pioneer	Friday
Shoshone	Journal	Friday
Shoshone	Signal	Thursday
Silver City	Owyhee Avalanche	Friday
Soda Springs	Chieftain	Thursday
Soldier	Camas Prairie Courier	Thursday
Southwick	Potlatch Star	Friday
Spirit Lake	Herald	Friday
Star	Courier	Friday
Stites	Signal	Friday
Sugar City	Times	Saturday
Sweet	Boise County Sentinel	Weekly
Troy	News	Friday
Twin Falls	News	Thursday
Twin Falls	Times	Friday
Twin Falls	Chronicle	Tuesday
Vanwyck	Times	Wednesday
Vollmer	North Idaho Review	Thursday
Wallace	Miner	Thursday
Wallace	Press-Times	Daily
Wardner	News	Saturday
Wendell	Irrigationist	Friday
Weiser	Signal	Daily
Weiser	American	Thursday
Whitebird	Salmon River Sun	Thursday
Wilchester	Journal	Saturday

IDAHO COMMERCIAL CLUBS.

Town	President	Secretary
Aberdeen	Dr. M. C. McKinnon	E. W. Harold
Albion	A. Lounsbury	G. A. Axline
American Falls	D. W. Davis	G. F. Finnegan
Ashton	William Smuin	Fred Swanstrom
Bancroft	George A. Toolson	Henry Van Stooten
Bellevue	Charles W. Wilson	Charles Sheehan
Blackfoot	L. R. Aldrich	H. B. Curtis
Boise	C. J. Sinsel	R. W. Childs
Burley	J. C. Patterson	R. H. Schenk
Bruneau	A. J. Harley	J. C. Bartlett
Caldwell	J. W. Gue	M. H. Gibbons
Cambridge	Thomas Nelson	A. W. Gipson
Cottonwood	E. L. Parker	M. M. Belknap
Culdesac	Al Fonburg	O. B. Wintersteen
Deary	Dr. R. C. Faust	W. J. Davis
Downey	W. H. Coffin	H. P. Pinkney
Driggs	Albert Charles	F. C. Madsen
Elk City		G. L. Baskett
Emmett	G. B. Mains	H. T. Davis
Filer	J. W. Tanner	Elmer Hoag
Genesee	Fred Follett	J. T. Nelson
Gooding	Lyman Taylor	T. P. Sutphen
Grangeville	S. A. Anderson	Frank Van Deventer
Hailey	C. T. Harte	C. T. Heydecker
Harrison	J. F. Pollok	M. A. Kiger
Heyburn	F. H. Adams	H. B. Reelford
Hollister	W. H. Craven	C. E. Holderman
Idaho Falls	B. J. Briggs	R. D. Larabie
Ilo	B. D. Leonard	Carl Yount
Jerome	W. H. O'Brien	A. D. Williamson
Kamiah	E. D. Parr	Emil Mueller
Kooskia	F. A. Fenn	H. E. O'Donnell
Lewiston	C. F. Osmers	Wallace R. Struble
Malad	P. Frederickson	D. J. Reynolds
Meridian	George E. Atwater	Arthur Garrett
Midvale	J. H. Harris, Jr.	F. O. Baker
Montpelier		C. E. Harris
Moscow		P. L. Orcutt
Mountainhome	Harry Watkins	George Jacobson
Mullan	O. A. Riedel	H. W. Yougalls
Nampa	N. Jenness	C. L. Robbins
Nezperce	A. G. Gross	C. E. Clovis
Oakley	John McMurray	Thomas H. Farmer
Orofino	William Peatman	P. H. Blake
Paris	William L. Rich	H. H. Broomhead
Parma	E. G. Johnson	G. R. Russell
Payette	M. F. Albert	J. A. Harader
Peck	J. A. MacRae	J. C. Peterson
Pocatello	W. H. Bohlscheid	R. W. Colburn
Post Falls	Alfred Webster	W. A. Carter
Rathdrum	Stewart Young	G. R. Klopf
Reubens	H. L. Brown	George Guigwood
Rexburg	W. L. Adams	Thomas E. Bassett
Richfield	R. E. Mickelwait	F. G. Lechleiter
Rigby	James H. Steele	H. L. Hopper
Roseberry	H. C. Vaine	Ira Blankinship
Rupert	F. N. Victor	W. R. Hyatt
St. Anthony	O. P. Soule	C. H. Reed
St. Maries	V. E. Rogers	H. R. Taylor
Salmon	W. J. Brown	H. E. Frost
Sandpoint	Andrew Christianson	E. H. Edgerton
Shelley	J. L. Moore	T. J. Benett
Soda Springs	John Farebauer	W. H. Hildreth
Soldier	A. A. Higgs	J. E. Edgerton
Stites	Wesley Packer	T. P. Tollefson
Troy	F. M. Green	A. H. Oversmith
Twin Falls	Willet Hance	Carl Huffman
Wallace	E. R. Denny	F. W. Roach
Weiser	Nathan Sommer	Charles W. Meighan
Wendell	E. L. Eau	G. D. McKibbie

Inquiries addressed to the commercial clubs will bring literature and information relative to resources of their respective districts. Questions concerning openings of a business or professional character should be addressed to the clubs.

LOG BOOM ON LAKE CŒUR D'ALENE

"See America First"—Begin with Idaho.

Idaho Forests and Related Resources

District Forester.

LOG BOOM ON LAKE COEUR D'ALENE.

The lakes of the intermountain country became almost sacred to the early settler. From the deep, blue, almost icy cold water, the pioneer obtained his supply of fish at regular intervals. It was from among the seclusion of the marshes that he captured the wild fowl and from the more than half protected banks, the deer that came to water gave up an occasional member from the herd that found a home among the foothills in the surroundnig country. Their numbers continued to increase, notwithstanding the early settlers' well-trained rifle shots, as there was never wanton slaughter. The lakes, therefore, became the storehouses of food supply, as it were, for the early pioneer.

Lake Cœur d'Alene, Lake Pend d'Oreille and Priest Lakes are among the largest in Idaho and they are all three located in Kootenai and Bonner counties. There are many smaller though equally beautiful lakes throughout the state. These largest lakes are from one to ten miles in width and more than fifty miles in length.

These waters also served the transportation needs of the pioneer. The row boat and sail boat sufficed in early days and later the barge carried the more pretentious cargoes. Modern equipment includes good-sized steamboats, gasoline launches, "swifter than the winds," and the snorting little tugs that are wonderfully persistent and have a pulling power out of all proportion to their size.

One day their cargo may be a series of barges with a burden of ore brought from the tunneled mountain, enroute to the smelter miles away. The return trip may include a cargo of fresh farm products destined to the mines.

On another trip the doughty little tug will have in tow a log boom as herewith shown, with a million and a half feet of lumber in the form of logs that have been skidded down long chutes from the hillsides to the water's edge where they are confined in great booms ready for their journey to the lumber mills located on the farther shore where the steam railway lines extend out to the lake or river bank.

The lakes of Idaho are equally as sacred today as fifty years ago. Modern utility has not sacrificed natural beauty but rather has enhanced the value of these splendid natural assets for the benefit of all mankind.

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Idaho Forests and Related Resources

E. H. SHERMAN, *District Forester.*

ALTHOUGH lying partly within the arid belt Idaho is well forested. The total land area of the state is 54,272,000 acres, of which 20,000,000 acres, or 37% is forested. Ample provision is made for the protection of the forested area by the fact that out of the total of 129 billion feet B. M., 71 billion feet or 55% is included in the National Forests, leaving 50 billion feet privately owned and 8 billion otherwise held by the Government or state. In area 90% or 18,000,000 acres of the forest is under national control. Much of this area contains immature stands which have not yet reached the producing stage, but which will repay protection.

VAST FOREST AREAS

Forests in this region serve directly two chief purposes: First, the lumber and other wood products yielded; Second, the summer forage crop produced. Aside from these two great uses, there is coming to be recognized an indirect value, viz.: Climate amelioration and watershed protection. When one stops to think of the vast importance of water in this state from the irrigation standpoint alone, not considering power and other uses, the great value of the forest in this connection is

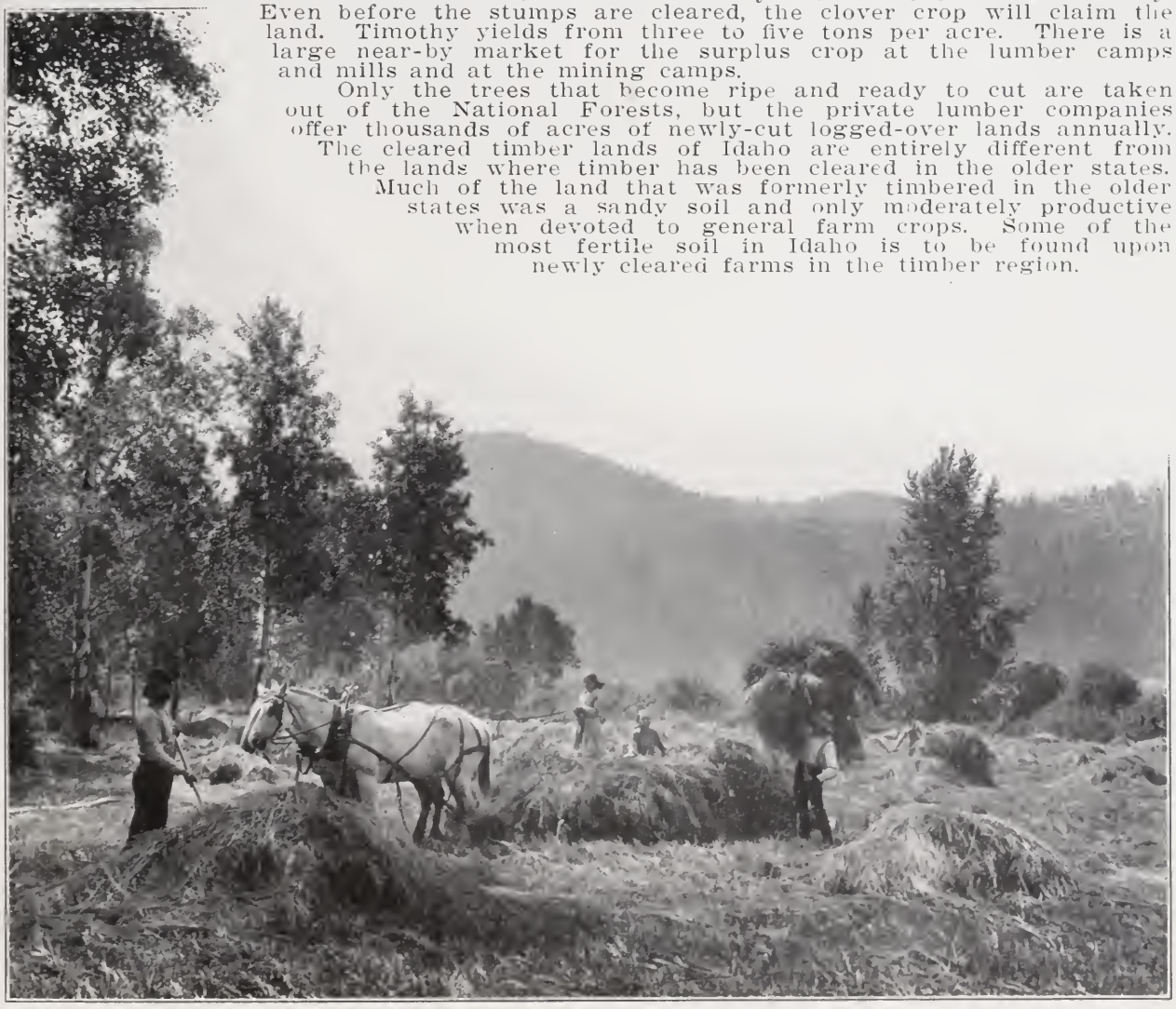
RELATED USES

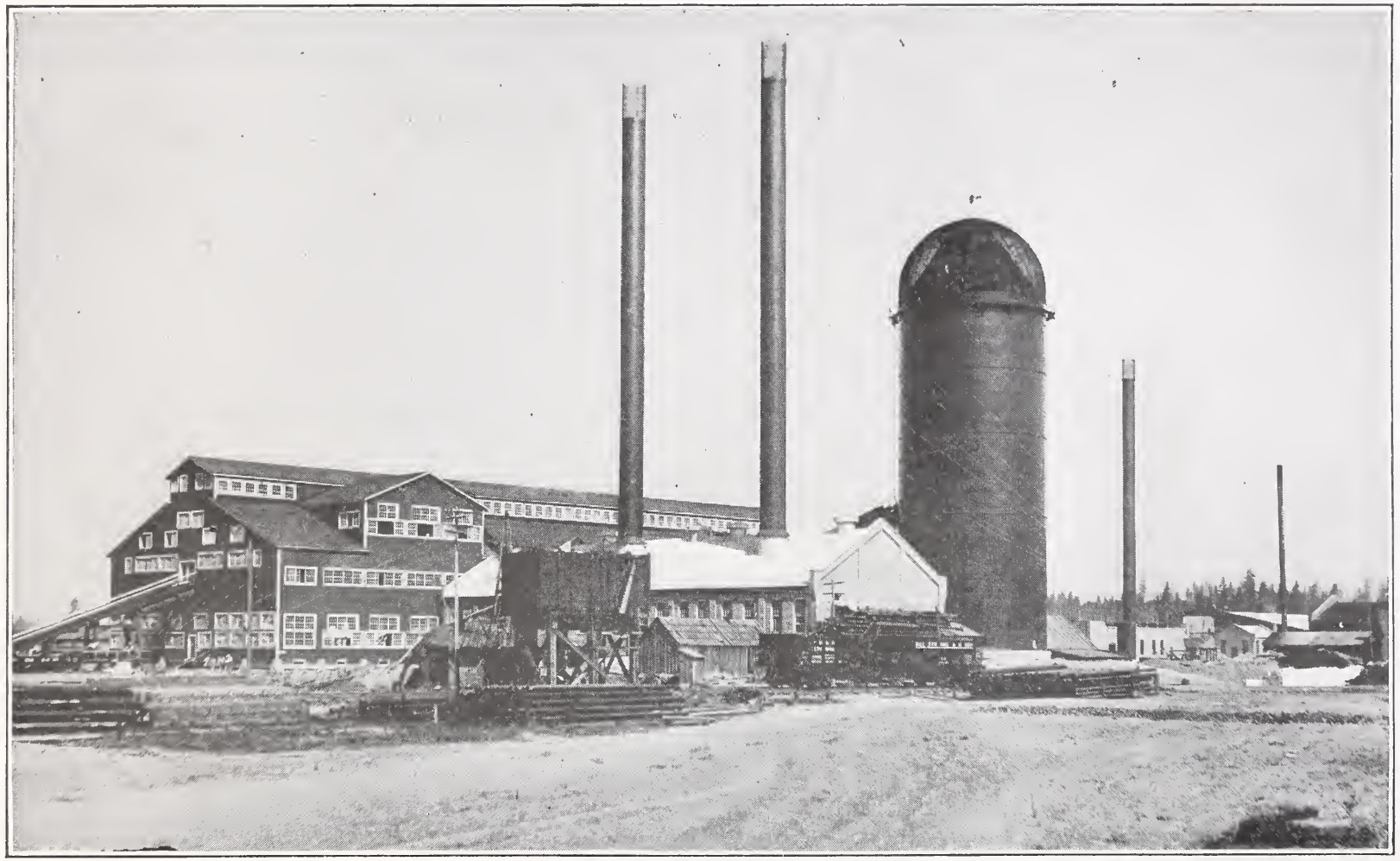
WHERE THE FORESTS HAVE BEEN CLEARED.

Nearly 45% of the standing timber in Idaho is privately owned. Large areas of the timber land that is privately owned is logged-over, cleared, and made available for general farming purposes each year.

All of the clovers do remarkably well in the timber country. Even before the stumps are cleared, the clover crop will claim the land. Timothy yields from three to five tons per acre. There is a large near-by market for the surplus crop at the lumber camps and mills and at the mining camps.

Only the trees that become ripe and ready to cut are taken out of the National Forests, but the private lumber companies offer thousands of acres of newly-cut logged-over lands annually. The cleared timber lands of Idaho are entirely different from the lands where timber has been cleared in the older states. Much of the land that was formerly timbered in the older states was a sandy soil and only moderately productive when devoted to general farm crops. Some of the most fertile soil in Idaho is to be found upon newly cleared farms in the timber region.





THE LARGEST SAWMILL IN THE WORLD.

Showing a section of the largest sawmill in the world. This mill is located at Potlatch, Idaho. It has a capacity of 750,000 feet of board measure lumber in a twenty-four hour day. Two shifts are used a large part of the time. The company operates its own railway, 45 miles in length, to bring the logs from the forests.

The mill is equipped with all the latest appliances that enable them to utilize even the smallest slabs. The tiny box cleat used in fruit packages is yielded from what was formerly waste; lath are made from larger pieces. A large portion of the lumber is worked into finished products, such as doors, windows, casings frames and many kinds of finishing lumber and structural material for the building and manufacturing trade. Economic methods prevail throughout the entire plant. Eight hundred horse power electricity is generated, using exhaust steam that would otherwise be waste. This electricity is used to furnish motive power throughout the plant. Small engines, operated by storage battery power is used to distribute the small lumber cars throughout the premises, where the lumber is classified and piled, awating shipping orders.

There are many mills in Idaho equally as well equipped, but not so extensive as the one herewith shown.

realized. Between 1900 and 1910 the acreage irrigated in Idaho increased 135%.

Under rational management, especially such management as the Federal Government gives its Forest holdings, every resource which the Forest affords is put to its legitimate and full use. The policy is *use*, so far as possible, without defeating the purpose of retaining a continuous permanent forest cover on lands most suitable for forest purposes.

A brief survey of related industries which the forest, aside from its direct products, fosters and protects, will show the necessity of a wise, far-reaching policy of developing a careful management for the state's forest area.

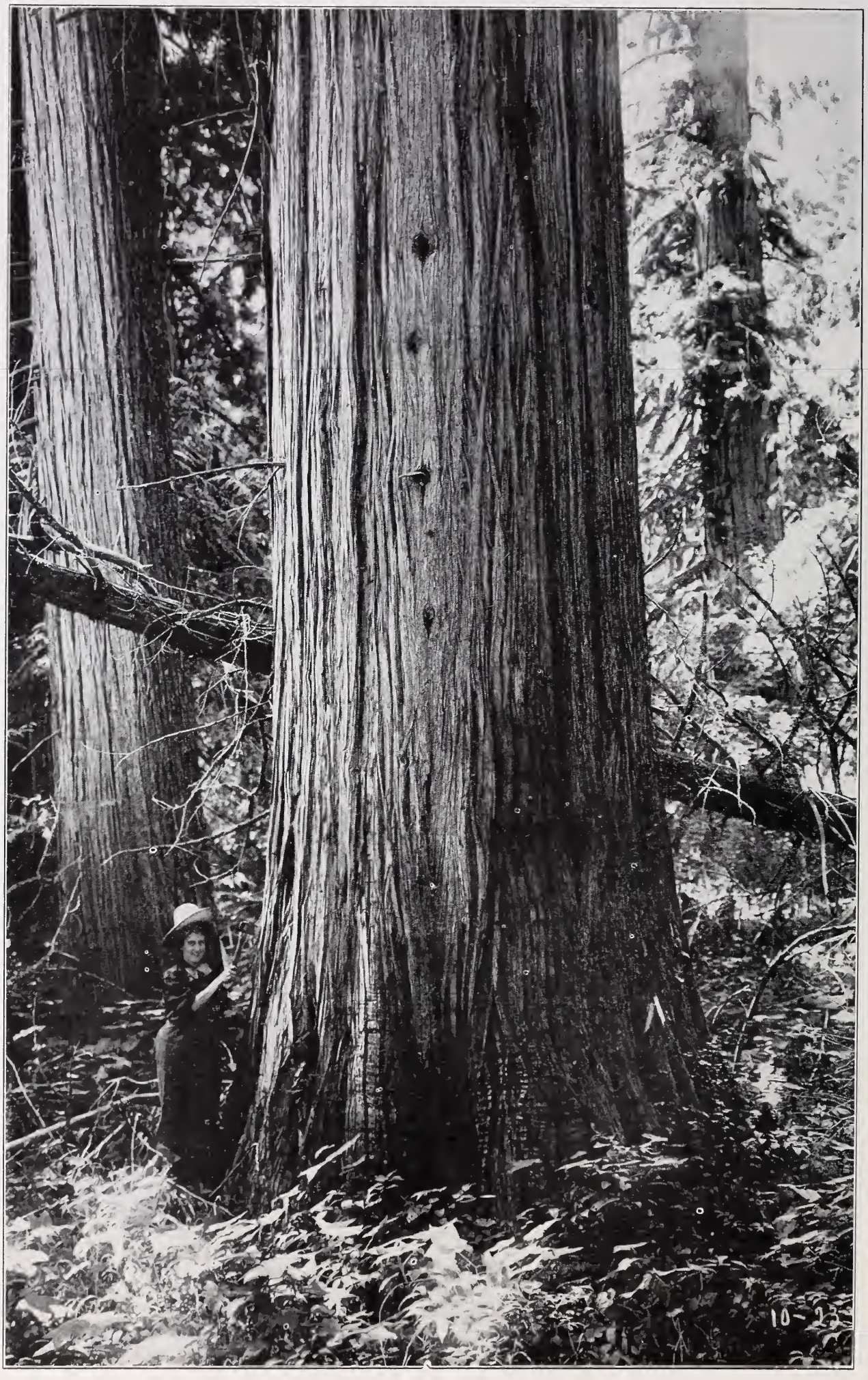
RELATION TO LIVE STOCK

The sheep industry of Idaho is a vast one. In 1911 there were 2,200,000 sheep of shearing age and the total wool clip that year was 16,500,000 pounds, valued at $2,887,500. During the summer, a large majority of the sheep, as well as a large number of cattle and horses, are annually grazed on the range afforded by the National Forests of the state, as evidenced by the fact that during 1911, 134,400 head of cattle and horses and 1,720,500 sheep were authorized to graze in the National Forests of the state.

The relation of the forests of the state to the vast farming and ranching industry comes largely, as before stated, from the importance of water for irrigation. The statistical report of the United States Department of Commerce and Labor for 1911 gives the following facts in regard to the extent and value of farm property in Idaho in 1910:

DRAWING THE LOGS TO THE SHIPPING STATION.

The forests have been penetrated by the railroads in some of the best timber districts for many miles. The ever-faithful horse continues to be man's faithful servant. There is almost no stage of highly civilized development that the horse does not become an important factor. Where the hillsides are too steep for the railway or for the horse, log "chutes" are built that handle the huge logs. The logging camps and the great lumber mills require large numbers of horses, which means an excellent market for the surplus horses of the west. The lakes and streams also greatly aid in transporting the logs to the mills.



AMONG THE GIANT CEDARS.

(1). Number and acreage of farms and number of acres improved and unimproved, Idaho, 1910.

Number of Farms	Number of Acres in Farms			Average No. Acres to a Farm	% of Farm Land Improved
	Improved	Unimproved	Total		
30,807	2,778,740	2,504,864	5,283,604	171.5	52.6

(2). Value of farm property in Idaho, 1910.

Land	Buildings	Implements and Machinery	Live Stock	All Farm Property
$219,953,316	$25,112,509	$10,476,051	$39,775,309	$305,317,185

The hay and grain crop of the state, which is so important in the stock industry, is valued at over $28,000,000.

At present the Federal Government has two large irrigation projects under way, the Boise and the Minidoka. The combined drainage area for both is 25,210 square miles with a mean annual run-off in acre feet of 8,660,000. The total irrigable area to which the water from these projects may be applied is 367,700 acres. Irrigation work is yet in its infancy. It needs but little imagination and a glance into the future to see all the principal streams of the state strung with reservoirs at every available point. All or practically all the flood waters resulting from the melting of the snows in early spring and summer which now largely go to waste will be held back for use in irrigation on the vast arid tracts at the lower elevations.

An idea may be gained of the tremendous flow from the forest streams of this region, by the measurements made at Dalles, Oregon, on the Columbia river, which have been kept up for a period of 30 years. The mean annual run-off for this 30-year period is 170 million acre feet. (An acre foot of water means sufficient water to cover one acre one foot deep).

When one remembers that 20 million acres of this watershed are covered by forests in the state of Idaho and that of this amount 18 million acres in round numbers are in the National Forests and protected by the Federal Government, this important relation is seen.

CONSERVATION THROUGH USE

It is frequently said that the National Forests (miscalled "reserves") are locked up from use from the people of the state. Such is not the fact. In 1911, there were cut on the National Forests under Government sales in Idaho, 49,579,000 feet B. M., valued at $118,472.26. During the same year there were issued to settlers free of charge for direct use on their holdings 21,523,000 feet B. M., valued at $31,-797.32. This makes a total of 71,120,000 feet B. M., valued at $150,269.58 used by the state that year from the National Forests within it—a large amount, since the Government Forests lie in more rugged mountains and are more remote than private timber. With the development of railroad facilities, the cut on the National Forests will outstrip that of the private holdings. The important point is, that the Government does not lock up this resource, but encourages and promotes its use under settled and definite management which releases the timber as needed and at the same time providing for its perpetuation.

Another important point to remember is the fire danger to which the state's forest wealth is subjected every year. On the National Forests fire protection is reduced

AMONG THE GIANT CEDARS.

The photograph herewith reproduced shows a section of one of the giant cedars found in the forests of northern Idaho. This tree is 8½ feet in diameter and is estimated to contain 26,500 feet, board measure. This is a sufficient quantity of lumber to build a good-sized house and barn. There are only limited areas of cedar yet standing in the world. The cedar districts of Idaho furnish telephone and telegraph poles, and heavy poles for similar use, which are shipped to nearly all parts of the English-speaking world. The cedar withstands the elements with less decay when set in the ground than any other timber available for these needs. Idaho cedar fence posts are shipped in commercial quantities into more than thirty states of the Union. The large specimens herewith illustrated are not used, however, in the pole and post industry. These large trees are converted into lumber that goes into the highest class of trade.

White pine log storage containing about four million feet of lumber. Idaho contains the largest body of standing white pine timber in the world. A considerable portion of it is owned by the State of Idaho.

ORGANIZED FIRE PROTECTION

to a science and every means is taken to guard against this source of loss. The machinery of preventing fires and of quickly locating and stamping them out is constantly improved each year. Not only this, but realizing the fire danger to its holdings from outside adjacent forest tracts, the Government encourages in every way possible co-operative fire prevention and fire fighting on the state and other forest holdings throughout the state.

REGULATED GRAZING

National control of the forects of the state means, in addition to forest management, a settled policy of summer range management also. Unregulated grazing, as may be seen in many places, damages the range almost irreparably in addition to seriously affecting the forest itself and its value as a watershed protector. Range management does not mean exclusion of grazing stock but the proper proportioning of stock to the permanent carrying capacity of the range. It is based on a careful study of the value of the different elements of forage on the range in question and the conditions of its utilization. It sometimes means a reduction in one locality but it also means development in other localities and increased value to the community of the range as a whole.

EQUALIZED WATER FLOW

By regulating the way in which the forest cover shall be used and the way the range shall be used insures that the watershed is in the best condition possible to promote and maintain an equalized stream flow throughout the summer period when it is needed for irrigation and other uses. In addition to insuring a regular flow of water, management of the forest and its included range prevents or reduces soil erosion from the steep slopes at the headwaters of the streams, thereby reducing to a minimum the cutting out of canals and silting up of reservoirs.

By fostering, through the protection of the water supply, the development of desert land at the lower levels and in careful management of the summer range, the forest plays a part in producing the largest amount of agriculture crops and the means for their consumption by live stock, thus insuring a stability of the state's basic industries.

Apart from this is the maintenance of the purity of the streams so important in conserving the health of the communities and cities of the state.

Considering the vast inter-related sources of the state's wealth which the forests protect, Idaho will yet see the day when the care taken to insure the rational management of its forests will be appreciated to its full extent. It will be seen that such management of the forests is but a natural economic development.

Table giving the names of the National Forests in Idaho, area, headquarters of supervisor, last proclamation date effective, and the amount that was received by the Forest Service for grazing privileges in the forests of Idaho during the last fiscal year, one-fourth of which amount was turned over to the state for school purposes.

Forest	Headquarters of Supervisor	Last Proclamation Date Effective	Number Acres in Forest	Amount Received for Grazing Privileges
Beaverhead [1]	Dillon, Mont.	July 1, 1910	92,000	889.11
Boise	Boise	Dec. 24, 1910	1,107,000	10,273.05
Cache [2]	Logan, Utah	Jan. 24, 1912	269,922	5,464.83
Caribou [3]	Montpelier	May 6, 1910	695,000	17,120.40
Challis	Challis	July 1, 1908	1,194,000	4,842.75
Clearwater	Orofino	July 1, 1911	822,700	773.00
Coeur d'Alene	Coeur d'Alene	July 1, 1911	760,800	35,850.71
Idaho	McCall	Mar. 23, 1912	1,209,980	7,663.82
Kaniksu [4]	Newport, Wash.	May 6, 1910	465,200	19,571.24
Lemhi	Mackay	July 1, 1910	1,136,500	7,147.77
Minidoka [5]	Oakley	May 6, 1910	539,050	8,986.65
Nezperce	Grangeville	July 1, 1911	1,745,060	5,276.79
Palisade [6]	St. Anthony	July 1, 1910	301,300	5,581.82
Payette	Emmett	July 1, 1911	863,750	7,883.47
Pend d'Oreille	Sandpoint	May 6, 1910	858,000	4,373.87
Pocatello [7]	Pocatello	Feb. 18, 1911 [8]	281,745	5,404.20
St. Joe	St. Maries	June 4, 1912 [9]	1,033,500	
Salmon	Salmon	July 1, 1908	1,635,500	9,768.69
Sawtooth	Hailey	July 1, 1908	1,320,000	22,356.70
Selway	Kooskia	July 1, 1911	1,802,000	
Targhee [10]	St. Anthony	July 1, 1910	738,000	15,062.73
Weiser	Weiser	July 1, 1911	680,460	16,085.73
TOTAL—22 Reservations			19,550,827	$210,377.33

1—Total of Beaverhead in Idaho and Montana, 1,457,000 acres.
2—Total of Cache in Idaho and Utah, 579,660 acres.
3—Total of Caribou in Idaho and Wyoming, 702,360 acres.
4—Total of Kaniksu in Idaho and Washington, 835,740 acres.
5—Total of Minidoka in Idaho and Utah, 631,330 acres.
6—Total of Palisade in Idaho and Wyoming, 557,500 acres.
7—Total of Pocatello in Idaho and Utah, 292,560 acres.
8—Addition by act of congress.
9—This proclamation modifies the former proclamation but the area remains unchanged until state selection is approved.
10—Total of Targhee in Idaho and Wyoming, 823,450 acres.

Table showing the number of acres of the various National Forests in each of the counties of Idaho, together with one-fourth of the amount of money received by the federal government for grazing privileges in the forests during the fiscal year 1911. By a provision of the law one-fourth of the receipts are given to the state for the benefit of roads and public schools, and are apportioned among the counties in which the receipts originated. The accompanying table is based on the figures furnished the state auditor by the Forest Service, Department of Agriculture, Washington, D. C.

County	Forest	Number of Acres in County	Port'n of Rental from each Forest Ret'd to County	Total Amt. Allot'd Co. for Sch'l & Road Purposes
Bannock	Cache	86,630	$ 427.27	
	Caribou	313,457	1,930.40	
	Pocatello	125,073	599.77	$ 2,957.44
		525.160		
Bear Lake	Cache	102,265	504.39	
		67,277	414.32	918.71
		169,542		
Bingham [1]	Caribou	314,266	1,935.38	
	Palisade	152,986	708.54	2,643.92
		467,252		
Blaine	Boise	86,630	201.00	
	Lemhi	211,968	333.28	
	Sawtooth	874,887	3,704.37	4,238.65
		1,173,485		
Boise	Boise	537,155	1,223.00	
	Idaho	104,544	222.18	
	Payette	633,678	1,443.80	
	Weiser	23,040	122.57	3,011.55
		1,298,417		
Bonner	Coeur d'Alene	11,981	68.35	
	Kaniksu	465,260	4,892.81	
	Pend d'Oreille	837,264	1,067.01	6,028.17
		1,314,505		
Cassia	Minidoka	389,751	1,624.41	1,624.41
Custer	Challis	794,669	805.78	
	Lemhi	614,874	966.78	
	Shoshone	320,717	1,357.98	3,130.54
		1,730,260		
Elmore	Boise	493,215	1,144.26	
	Sawtooth	124,416	526.82	1,671.08
		617,631		
Fremont	Lemhi	182,477	286.91	
	Palisade	148,314	686.91	
	Targhee	738,000	3,765.68	4,739.50
		1,068,791		
Idaho	Challis	39,907	40.46	
	Clearwater	1,776,134	124.93	
	Idaho	1,027,219	1,623.84	
	Payette	217,498	495.56	
	Salmon	47,002	70.20	2,354.99
		3,107,760		
Kootenai	Coeur d Alene	332,698	1,898.07	
	Nezperce	1,819,705	1,296.54	
	Pend d'Oreille	20,736	26.46	3,221.07
		2,173,139		

1—The acreage of National Forest reported by the Forest Service to the State Auditor as being in Bingham county, is all in what is now Bonneville county.

Table showing the number of acres of the various National Forests in each of the counties of Idaho, etc.,—(Continued).

County	Forest	Number of Acres in County	Portion Rental from each Forest Ret'd to County	Total Amt. Allot'd Co. for Sch'l & Road Purposes
Latah	Coeur d'Alene	117,043	667.74	667.74
Lemhi	Challis	359,424	364.45	
	Lemhi	127,181	199.97	
	Salmon	1,588,498	2,371.97	
	Beaverhead	92,000	222.28	
	Nezperce	31,795	22.66	3,181.33
		2,198,898		
Nezperce [2]	Clearwater	796,262	56.00	
	Coeur d'Alene	47,002	268.15	324.15
		843,264		
Oneida	Cache	88,105	434.55	
	Minidoka	52,531	218.94	
	Pocatello	156,672	751.28	1,404.77
		297,308		
Shoshone	Clearwater	175,104	12.32	
	Coeur d'Alene	1,062,276	6,060.38	6,072.70
		1,237,380		
Twin Falls	Minidoka	96,768	403.31	403.31
Washington [3]	Idaho	44,237	69.93	
	Payette	13,824	31.51	
	Weiser	732,960	3,898.66	4,000.30
		791,021		
	Total Acreage	19,013,813	Total Valuation	$52,594.33

2—The acreage listed under Nezperce county is all in Clearwater county. There is no National Forest in Nezperce or Lewis county, which with Clearwater county, formerly composed Nezperce county.

3—The Forest Service has reported the acreage of National Forest in what was formerly Washington county, but now consists of Washington and Adams counties. According to officials in the Boise forest office, the acreage in Washington county is approximately 162,910, while that in Adams is 629,111.

*—The report of the acreage of National Forest from which revenue was received, as reported to the State Auditor for the fiscal year 1911, is 537,014 acres less than that given in the bulletin issued by the service August 2, 1912. This difference may be attributed to the re-arrangement of boundaries of some of the reservations.

There is no National Forest in Ada, Canyon, Owyhee, Lincoln and what are now Lewis, Nezperce and Bingham counties.

A large revised map of the state of Idaho is available to inquirers which shows the location of all National Forests.

Statement by land districts and counties giving the area of surveyed and unsurveyed public lands and a brief description of the character of the vacant lands, as compiled by the General Land Office at Washington, D. C., July 1, 1912. Filings are being made on these lands daily, and for that reason the areas are constantly changing.

Land district and county	Area unappropriated and unreserved.			Brief Description of character of unappropriated and unreserved land.
	Acres surveyed	Acres unsurveyed	Total	
Blackfoot District; office at Blackfoot, Ida.				
County—				
Bannock	314,308	260,088	574,396	Mountainous and agricultural lands.
Bear Lake	51,000	197,228	248,228	Do.
Bingham	237,293	447,801	685,094	Do.
Blaine	10,860	....	10,860	Do.
Bonneville	203,076	547,789	750,865	Do.
Fremont	648,004	1,115,645	1,763,649	Do.
Lemhi	....	29,000	29,000	Do.
Oneida	132,752	478,315	611,067	Do.
TOTAL	1,597,293	3,075,866	4,673,159	
Boise District; Office at Boise, Idaho.				
County—				
Ada	242,760	10,240	253,000	Arid, mountainous, timbered.
Adams	107,849	....	107,849	Mountainous, timbered, grazing.
Boise	261,496	80,800	342,296	Mountainous, timbered, mineral, grazing
Canyon	208,808	6,400	215,208	Arid and grazing.
Elmore	363,279	171,110	534,389	Arid, mountainous, mineral.
Idaho	39,947	611,703	651,650	Mountainous, mineral, timber.
Owyhee	938,285	2,585,165	3,523,450	Arid, mountainous, mineral, grazing.
Washington	397,577	95,603	493,180	Arid, mountainous, timber, mineral.
TOTAL	2,560,001	3,561,021	6,121,022	
Coeur d'Alene District; Office at Coeur d'Alene, Idaho				
County—				
Bonner	31,609	1,120	32,729	Agricultural and timbered.
Kootenai	59,447	11,280	70,727	Do.
Shoshone	52,419	54,730	107,149	Agricultural, timbered, mineral.
TOTAL	143,475	67,130	210,605	
Hailey District; Office at Hailey, Idaho.				
County—				
Bingham	15,458	54,400	69,858	Lava and sage brush plains.
Blaine	776,640	1,457,280	2,223,920	Mountainous, grazing, sage brush plains
Boise	....	112,500	112,500	Mountainous and grazing.
Cassia	513,100	128,000	641,100	Grazing, sage brush plains.
Custer	166,310	619,680	1,085,990	Mountainous, grazing.
Elmore	109,510	64,640	174,150	Do.
Fremont	37,271	33,880	71,151	Lava and sage brush plains.
Idaho	24,060	654,400	678,460	Mountainous, grazing.
Lemhi	244,750	407,680	652,430	Mountainous and arid prairie.
Lincoln	449,750	626,560	1,076,310	Lava and sage brush plains.
Owyhee	83,430	252,800	336,230	Do.
Twin Falls	208,020	286,080	494,100	Do.
TOTAL	2,628,299	4,997,900	7,626,199	
Lewiston District Office at Lewiston, Idaho.				
County—				
Clearwater	14,117	....	14,117	Mountainous.
Idaho	138,111	20,100	158,211	Mountainous, timbered, agricultural.
Latah	1,412	1,280	2,692	Do.
Lewis	6,672	7,680	14,352	Mountainous.
Nez Perce	49,700	26,560	76,260	Do.
Shoshone	3,776	....	3,776	Do.
TOTAL	243,788	55,620	299,408	
State Total	7,172,856	11,757,537	18,970,393	

Inquiries should be addressed to the federal land offices, as indicated above, concerning lands in their respective districts.

Public Lands

IDAHO has vast areas of unappropriated and desirable public land which awaits the homeseeker. Within the state there are 18,970,393 acres which are classified as agricultural, grazing, mineral and timber. There are government lands to be obtained by the settler, some of which are susceptible of irrigation, others within the humid district where irrigation is not necessary to produce agricultural crops. There are 5,137,220 acres open to entry that have been classified as "dry farm" lands and subject to entry under the amended homestead act which permits the settler to file upon 320 acres instead of 160 acres, as heretofore.

The timber and stone lands may be obtained under the timber and stone act and the mineral lands under the mineral laws of the United States. Grazing lands, except those contained within the National Forests, are used in common by the farmers and stock-growers. Carey Act lands are available through entry made with the State Land Board. All of the lands under the United States reclamation projects now completed or in course of construction within the state of Idaho have been filed upon. Lands owned by the state are acquired by purchase.

Information regarding the location and entry of all lands held under the direction of the federal government in the various land districts of Idaho may be obtained by addressing the register and receiver of the United States land office of the districts of Boise, Blackfoot, Hailey, Lewiston and Cœur d'Alene, Idaho, or the General Land Office at Washington, D. C. Information in respect to state lands can be secured from the State Land department, Boise, Idaho.

HOMESTEAD LANDS.

Any qualified person who is the head of a family, or any unmarried person over the age of 21 years, who is a citizen of the United States or has declared his intention of becoming such, may enter upon a tract of land not exceeding 160 acres, and may acquire title thereto by three years' actual, permanent residence on the land, during which time he has erected a dwelling and has cultivated a certain portion of the land. Under the commutation clause of the law, a person, after having resided upon the land for 14 months, may, upon the payment of $1.25 per acre, secure a

THE BEGINNER'S HOMESTEAD.

It is often necessary for the settler to begin in a modest way. The small cottage gives way to the more pretentious, modern home a very few years later. A flock of poultry and a few milch cows will furnish the necessary living expenses for the family. Liberal terms upon the purchase price of land and water can be had so that after the first payment is made the earnings may be devoted largely to improvements. Within a few years the new settler becomes a regular depositor instead of a borrower at the local banks.

patent for the land. Persons who own more than 160 acres of land in the United States are not qualified to enter a homestead.

The term "continuous residence" is given rather liberal interpretation. The entryman is permitted to be absent from the land while attending to matters of business and for one continuous period of not more than five months of each year.

A person who desires to file upon a homestead, selects from the unappropriated lands the tract which he desires, makes the necessary affidavits at the land office in the district wherein the land is situated and deposits a nominal fee. He must declare that he makes the application in good faith for the purpose of settling and cultivating the land. Six months' time is allowed in which to establish residence on the land, after the papers have been filed. He must cultivate one-sixteenth of the land, beginning with the second year of the entry, and one-eighth the following year, until final proof is made, which may be made three years from the time of establishment of actual residence on the land, or at any time thereafter within five years from the date of entry. Honorably discharged soldiers and sailors of the Civil War, the Spanish War or those who engaged in the suppression of the Philippine insurrection, are entitled to claim credit under their homestead entries for the period of their military service, after they have resided upon, improved and cultivated the land for a period of one year.

ENLARGED HOMESTEADS.

Under conditions of qualification mentioned in the foregoing, entry may be made on 320 acres of land that has been designated by the Secretary of the Interior as "dry-farm" land. This land must be entered in a compact form. Lands designated as dry farm lands are those situated in the arid districts where the rainfall amounts to less than 20 inches per annum. The conditions of residence are practically the same as those mentioned under the general homestead law, except that during the second year of residence 20 acres of land must be cultivated, and during the third year, 40 acres must be put under cultivation. The period from which cultivation should be made, is reckoned from the date of entry. Upon dry farm homesteads residence is not required where water is not available for domestic and culinary purposes. However, the entryman shall reside not more than 20 miles from his land and shall cultivate twice the area required under the general provisions of the act.

Number of acres of public land now subject to entry under the Enlarged Homestead Act and designated by Government cruisers as suitable for dry farming purposes.

Boise District

	Acres
Ada County	24,480
Boise County	19,040
Canyon County	35,040
Elmore County	65,280
Owyhee County	283,540
Total Area for District	427,380

Blackfoot District

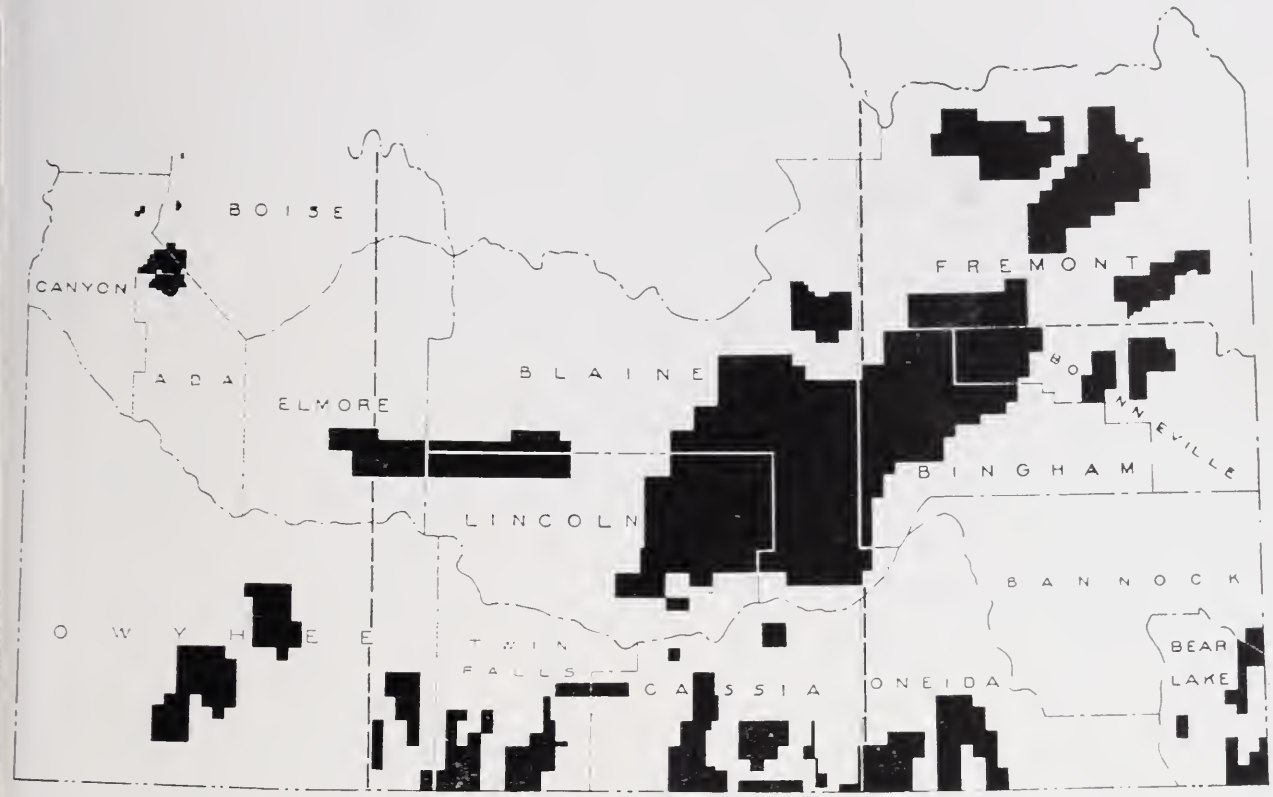
	Acres
Bannock County	10,480
Bear Lake County	114,560
Bingham County	571,800
Blaine County	10,480
Bonneville County	216,960
Fremont County	761,200
Oneida County	277,760
Total Area for District	1,963,240

Hailey District

	Acres
Blaine County	1,261,440
Cassia County	309,760
Elmore County	65,280
Lincoln County	760,320
Owyhee County	101,720
Twin Falls County	248,080
Total Area for District	2,746,600
Total Area in Three Districts	**5,137,220**

DESERT LANDS.

Any citizen of the United States over 21 years old, or any person who has declared his intention of becoming a citizen of the United States, and who has not secured title or is not claiming land under any of the federal agricultural laws, may



Graphic map showing location of more than five million acres of land now open to entry under the amended homestead act, which permits the entryman to take 320 acres instead of 160 acres. The entryman is not always required to live on the land but must show good faith in its development.

enter 320 acres of desert land in Idaho, which he intends to reclaim by irrigation. A woman, whether married or single, who possesses the necessary qualifications, can make a desert land entry, and, if married, without taking into consideration any entries her husband may have made. A person who holds lands under the homestead, timber and stone, or other agricultural land laws, in the amount of 160 acres, may enter only 160 acres of land under the Desert Land laws.

The desert land is designated as that land which will not without irrigation, produce some agricultural crop. Mineral and timber lands are excluded. A person who desires to make a desert entry must file with the register and receiver of the land office in the district wherein the land is situated, a complete description of the land, together with plans of the irrigation system that he intends to install. Satisfactory proof of the source of the water supply must be made. At time of entry he pays 25 cents an acre and $1.00 an acre when final proof is made. He must expend toward reclaiming the land $1.00 an acre per annum during three years, and make final proof within four years from date of entry, at which time he must have conducted water upon each legal subdivision sufficient to irrigate the same and show the extent of his cultivation and improvements. A patent will be issued at any time before the expiration of the four years, should the required amount of money have been expended in the improvement of the land, and the land is under irrigation. Residence is not required on desert land. Two or more persons may enter adjacent land under this act and construct irrigation works for the entire tract.

STATE LANDS.

The sale or lease of state land, the title of which is vested in the state in land grants, the aggregate amount being 668,080 acres for the benefit of state institutions, together with Sections 16 and 36 of each township for school purposes, is placed under the direction of the State Land Board, which has power to select and control all lands donated to the state for any purpose. Common school lands require no selection, but the selection of the lands contained in other grants, after being made by the land board, must receive the approval of the Secretary of the Interior before title to the land rests with the state.

The sale of state land is made under the direction of the land board. The land is sold at public auction in tracts, not to exceed 160 acres to one purchaser. The purchaser must be a citizen of the United States, or a person who has declared his intention of becoming such. However, the purchaser need not be a citizen of the state. No state land is sold for less than $10 an acre nor for less than the

appraised valuation. The land is usually sold at the county seat of the county in which the land is situated after having been advertised, as required by law. The whole of the purchase price is required on the date of sale for lands that are chiefly valuable for timber, while agricultural lands that sell at from $10 to $25 an acre, ten per cent of the purchase price is required on the date of the sale, and the remainder can be paid in 18 annual payments with six per cent interest upon deferred payments. Twenty per cent of the purchase price is required to be paid at the time of the sale, on lands selling above $25 an acre, and the purchaser may pay the remaining amount in sixteen annual payments with six per cent interest. The purchaser may, on the date of the sale, or at any time thereafter, pay the entire amount of his purchase price. In either case of cash or deferred payments, when he pays the full amount, he receives a deed in fee simple, conveying to him full title in the land that he has purchased. State land certificates of sale are recorded in the office of the state land board. The purchaser may transfer the land by assignment of the certificate, a record of which is also kept by the state land board.

State land may be leased without limit to acreage, or without distinction as to citizenship of lessee, for a period of five years, and at the annual rental of not less than five per cent of the appraised valuation of the land. Rental on state land is paid in advance. Application to lease state lands is made to the state land department, and the lease of the land is let to the highest bidder. Should there be no competition for the lease of the lands the applicant may obtain the lease on payment of five per cent of the appraised value, together with the necessary fees.

CAREY ACT LANDS.

Under the Act of Congress, commonly called the Carey Act, the state may make application to the Interior Department for the segregation of arid lands with a view of entering into contract with corporations, companies or private individuals for the irrigation of the same. The contract which is entered into by the state land board and such corporation, company or persons specifies the character and extent of the irrigation works which must be approved by the state engineer and also specifies the amount to be charged by the irrigation company per acre for the irrigation of such lands.

Individuals who apply to enter these lands are permitted to do so by first entering into a contract with the irrigation company for the purchase of the water necessary to irrigate the tract of land that he seeks to enter, after which he will be entitled to make his selection not exceeding 160 acres in extent, by paying a filing fee with the state land board of 25 cents per acre and an additional 25 cents per acre when final proof is made.

Thus he acquires the land for the price allowed to be charged for the water plus 50 cents per acre. Thirty days' residence and the cultivation and irrigation of one-eighth of the entire tract is necessary at the time of making final proof, at which time the state issues a patent to the entryman.

These contracts usually provide that one-tenth of the cost of water is to be paid on the day of filing, and the remaining payments are made in nine annual installments. After the works are completed, the State Land Board and State Engineer thoroughly inspect the project, and if accepted, the project, together with all rights and franchises appertaining to it, becomes the property of the settlers. Each settler has a joint interest in proportion to the acreage of land he owns. The water right becomes a part of the land and passes with it to the grantee of the settler.

UNITED STATES RECLAMATION SERVICE LANDS.

Lands under the Reclamation Act are re-surveyed by the government engineers and divided into units of from 40 to 160 acres, though seldom such units exceed 80 acres. These lands can only be acquired under the homestead law.

MINERAL LANDS.

Any qualified person who discovers a vein or lode bearing gold or other valuable metal in Idaho is entitled to locate a claim on it 1,500 feet in length and 600 feet wide, on either side from the the center of the vein. He must distinctly mark the claim in such a way as will give notice to the public that the land has been appropriated. He must also erect a monument on the place of discovery, and give thereon his name, date of discovery of the claim, and the name of the claim. Sixty days after the location on the ground the locator must sink a shaft at least 10 feet deep and four feet square, and 90 days after the location, a substantial copy of notice must be filed in the office of the Recorder of the county or deputy mining recorder of the mining district in which the claim is located. The locator, in order to hold the claim, must annually expend $100 in development of the claim, which he can do by his own work. If he fails to do this work his claim is forfeited and is subject to be entered

by others. No time is specified when the locator must apply for a patent. He may hold the claim indefinitely by performing the annual assessment.

TIMBER AND STONE LAND.

Any qualified person may purchase timber or stone land in Idaho not to exceed 160 acres, at a minimum price of $2.50 per acre. The person who desires to purchase such land must file with the register of the land office in the district wherein the land is located, a written statement, in duplicate, describing the land he wishes to purchase, and which is unoccupied and unimproved, and which he believes to be uninhabitable and to contain no valuable mineral deposits, and is unfit for agricultural purposes. The land must be of value chiefly for its timber and stone, which the intending purchaser wishes to obtain for his own use and not for speculative purposes. Upon payment of the purchase money and fees, he is given title to the land.

ISOLATED TRACTS.

Isolated tracts of public land, not valuable for saline, coal or other mineral deposits, are sold at auction at the land office in the district wherein the land is located on application of persons desiring to purchase the land for his individual use and occupation, and not for speculation, provided he has not purchased isolated tracts the area of which, when added to the area for which application to purchase is made shall exceed 320 acres. Only one tract may be included in an application for sale, and no tract exceeding 160 acres will be ordered into the market. Should it be deemed advisable to sell the land, it is sold at auction at the United States district land office to the highest bidder, who must pay cash for the land. No isolated tracts are sold for less than $1.25 an acre.

A more recent provision of the law in regard to isolated tracts authorizes the sale of legal subdivisions not exceeding one quarter-section, the greater part of which is mountainous or too rough for cultivation. The land is sold to any person upon application, who holds a valid entry of lands adjoining such tract, regardless of the fact that such tract may not be actually isolated by the entry or other disposition of surrounding lands. The sale of the lands is left entirely to the discretion of the commissioner of the General Land Office.

Indians of Idaho

A TOTAL Indian population of 3,791, consisting of remnants of what were once five great and powerful tribes, reside within three Indian reservations in Idaho. The number is rapidly decreasing, and ere long the red man of Idaho, who not more than 40 years ago was held in continual fear by the white pioneer, will be known only in story. Yet the memory of the race will be everlasting, because of the many beautiful words that the white man has adopted from the Indian language and has given to the mountains and the valleys, the lakes and the streams, the counties, cities and towns.

Vital statistics of the Indians of Idaho show a death rate that greatly exceeds the rate of birth. The number of deaths among the Idaho Indians in the fiscal year 1911 was 145, while there were but 86 births.

The Cœur d'Alene reservation, comprising 104,077 acres, is located in Kootenai county. It is inhabited by 623 Cœur d'Alene and Spokane Indians. The office of the superintendent of the reservation is located at Tekoa, Washington. The Fort Hall reservation in Bingham and Bannock counties, with headquarters at Ross Fork, Idaho, includes 454,239 acres of land. It is set apart for the Bannock and Shoshone Indians and for the Lemhi tribe which was moved from the reservation in Lemhi county several years ago. There are 1779 Indians on the Fort Hall reservation.

The Nez Perces at Fort Lapwai, near Lewiston, are considered the most highly civilized Indians in Idaho. The tribe numbers 1389, all of whom have discarded their native attire and have adopted modern customs. There are 212,390 acres in the Fort Lapwai reservation.

Agriculture is the principal occupation followed by the Indians of Idaho. Sufficient land is set apart for them to insure each Indian a liberal income should he choose to cultivate the soil. However, much of the land is rented to white farmers, the Indians only cultivating small garden patches. This work is done mostly by the women. Houses have been built for the Indians, but in most instances they prefer their tepees. In northern Idaho the native dwellings may be seen erected near the houses, while on the Fort Hall reservation fully 300 Indians live in tepees. Of the Nez Perces, 235 live in permanent houses with floors and 240 live in houses without floors. Many of the Indians of the state have discarded the costume of the savage. However, on the Fort Hall reservation there are 1,233 Indians who wear native attire.

Extensive agricultural development has taken place on the Fort Hall reservation during the past few years. Approximately 47,800 acres of land on the reservation are under canals.

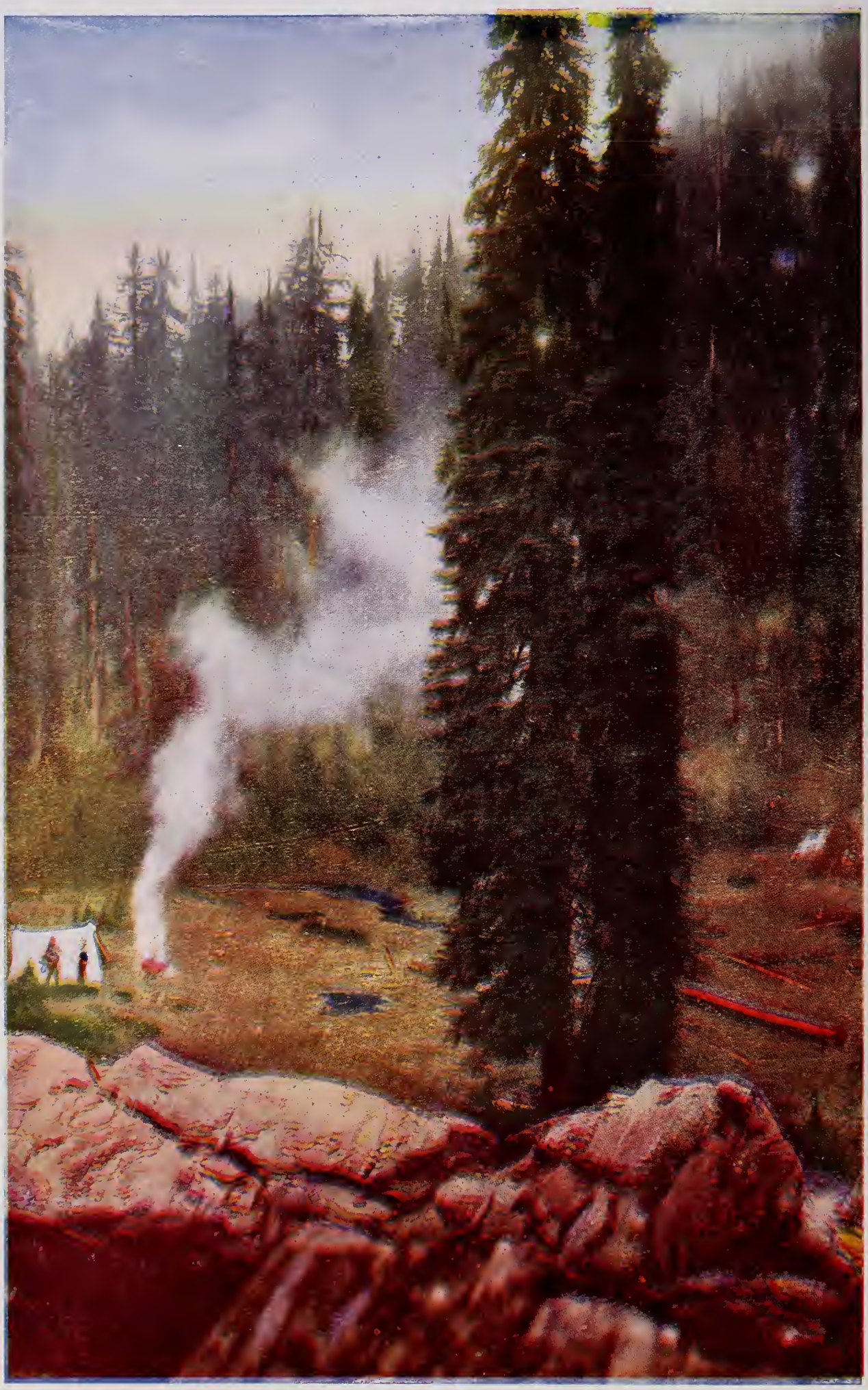
Schools are maintained on each of the reservations both by the federal government and by churches. Missions are also located among the Indians. The majority of them are favorable to education. The average enrollment at the Fort Hall school is 200 and at Fort Lapwai there is an enrollment of 158, while 57 children attend the school on the Cœur d'Alene reservation.

Idaho and Nevada share the Duck Valley reservation which is inhabited by the Piute and Western Shoshone Indians. The Idaho portion of this reservation is in Owyhee county. The Indian affairs are under the direction of the Department of the Interior.

CLASSIFIED INDIAN LANDS IN IDAHO.

Reservation	Acreage Agricultural Lands			Acreage of		Totals Acres	Grand Total Acres
	Irrigated	Irrigable	Agricul. without Irrig'n	Grazing Lands	Timber Lands		
Coeur d'Alene			70,560		32,000	102,560	
Fort Hall	4,200	24,000	74,748	298,992	46,000	447,940	
Lapwai	100	300	136,707	620	32,500	170,227	720,727

This does not include the Duck Valley Reservation which lies partly in Nevada.



IDAHO CAMPFIRES.

"See America First"—Begin with Idaho.

Irrigation

"This is the forest primeval. The murmuring pines and the hemlocks,
Bearded with moss, and in garments green, stand indistinct in the twilight.
* * * * * * *
Still stands the forest primeval; but under the shade of its branches
Dwells another race, with other customs and language."

"Like two cathedral towers these stately pines
Uplift their fretted summits tipped with cones;
The arch beneath them is not built with stones.
Not Art but Nature traced these lovely lines,
And carved this graceful arabesque of vines;
No organ but the wind here sighs and moans,
No sepulcher conceals a martyr's bones,
No marble bishop on his tomb reclines.
Enter! The pavement, carpeted with leaves,
Gives back a softened echo to thy tread!
Listen! The choir is singing; all the birds,
In leafy galleries beneath the eaves,
Are singing! Listen, ere the sound be fled,
And learn there may be worship without words."

—*Longfellow.*

IRRIGATION CANAL.

"This is the forest primeval. The murmuring pines and the hemlocks,
Bearded with moss, and in garments green, stand indistinct in
the twilight.

* * * * * * *

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—Longfellow.

Irrigation

SINCE the early discoveries of gold and silver and copper and lead in Idaho, no industry in the state has attracted such wide attention and has been such an impetus to immigration as irrigation—in fact, no other one factor has been so potent in the development of Idaho as the opening of our irrigated lands. Idaho today has a greater irrigated area than any other state in the Union. We unquestionably have greater acreage open to public entry susceptible of irrigation and cultivation which offers greater opportunity to the homeseeker than any other state.

We have the largest contiguous irrigated areas in the world and will soon begin construction of the largest artificial reservoir in the world. No state has a greater mileage of constructed canals and no state has expended as great an amount in the construction of irrigation works as Idaho and no state has such an abundant water supply available for irrigation. This state has participated in the opportunity offered under the provisions of the Carey Act law to an extent unapproached by any other state and we have also been the recipient of a very liberal endowment from the United States Reclamation service, under which act a very large area of land has been reclaimed.

With these phenomenals one unacquainted with conditions here might conclude that the limit has been reached; but not so—only a beginning has been made.

Hundreds of thousands of acres are yet unclaimed, awaiting capital and the genius of man to make them blossom and bear fruit.

If the history of irrigation in this state were properly written it would read like fiction. It extends over a half century of time and includes incidents in which figured the hardy pioneer who, from dire necessity, grappled with nature in a

IRRIGATION CANAL.

The above irrigation canal is really an artificial river which carries a larger amount of water than many streams which are dignified by the name of river. The canal here shown carries sufficient water to irrigate more than 30,000 acres in the Idaho Falls country. There are several other canals that also serve that district.

IDAHO CAREY ACT PROJECTS.

Schedule giving a recapitulation of statistics covering all Carey Act Projects in the state, including the segregations already granted and the applications for segregation now pending, 1912.
Compiled by the State Land Department.

	Name of Company and Address	Acreage in Project	Acreage Sold	Acreage open to Entry	Total Cost of Project, Estimated	Amount Expended to Date	Cost Wat'r Rig'ts per Acre	Length of Canals, Miles	
								Main	Lat'r'ls
1.	American Falls Canal & Power Co., Aberdeen, Ida.	57,241.90	47,351.42	9,890.48	$ 350,000.00	$ 925,027.00	$ 40.00	86.93	54.85
2.	Big Lost River Irrigation Co., Boise	78,241.56	60,524.37	20,000.00	3,500,000.00	1,600,000.00	40.00	95.00	100.00
3.	Birch Creek Irrigation Co., Boise	20,000.00	4,096.00		450,000.00	30,000.00	50.00	13.00	30.00
4.	Blackfoot North Side Irrig. Co., Blackfoot	22,280.34			800,000.00	5,000.00		50.00	25.00
5.	Black Canyon Irrigation District, Caldwell	98,492.00			7,134,638.05	32,114.00	72.50	43.00	195.00
6.	Blaine County Irrigation Company, Arco	14,720.00	10,760.00	3,960.00	300,000.00	246,000.00	40.00	15.00	45.00
7.	Boise City Carey Act Project, Boise	151,000.00			9,000,000.00	15,200.00		80.00	150.00
8.	Bruneau Irrigation Company, Boise	40,000.00			1,350,000.00	30,000.00	60.00	36.00	32.00
9.	Emmett Irrigation District, Emmett	5,800.00	5,800.00		350,000.00	900,000.00	50.00	33.00	50.00
10.	Grandview Extension Irrigation Company, Boise	1,000.00			150,000.00	45,000.00	65.00	15.00	4.50
11.	Grasmere Irrigation Company, Seattle	47,500.00			1,250,000.00	12,000.00	65.00	56.00	55.00
12.	Hansen, C. V., Project, Mackay	3,456.00			60,000.00	35,000.00	40.00	14.00	
13.	Hegsted, Victor, Project, Rexburg	3,410.00			100,000.00		40.00	10.00	10.00
14.	High Line Pumping Co., Ltd., Twin Falls	3,860.00	3,041.00	60.00	110,000.00	110,000.00	45.00	8.00	6.00
15.	Houston Ditch Co., Ltd., Darlington	1,884.00	1,500.00	184.00	50,000.00	35,000.00	35.00	13.00	6.00
16.	Idagon Irrigation Co., Ltd., Boise	9,000.00			590,000.00	75,000.00	60.00	40.00	40.00
17.	Idaho Irrigation Co., Ltd., Richfield	130,000.00	90,000.00	40,000.00	4,000,000.00	3,750,000.00	50.00	100.00	300.00
18.	Keating Carey Land Co., Butte, Mont.	15,596.71			250,000.00	65,000.00	30.00	13.00	27.00
19.	Kings Hill Extension Irrigation Co., Boise	9,654.91	8,139.18	1,515.73	650,000.00	502,213.18	65.00	25.00	12.02
20.	Kings Hill Irrigation & Power Co., Boise	13,359.34	9,969.43	3,389.91	600,000.00	1,101,963.08	65.00	27.00	19.70
21.	Lemhi Irrigation Co., Salmon	3,500.00			200,000.00	2,500.00	50.00	25.00	30.00
22.	Little Lost River Land & Irrigation Co., Boise	20,000.00			300,000.00	10,000.00	30.00	30.00	
23.	Marysville Canal & Improvement Co., Ltd., Boise	6,134.50	5,689.44	445.06	190,000.00	250,000.00	20.00	8.50	31.00
24.	Owsley Carey Land & Irrigation Co., Butte, Mont.	8,600.00			150,000.00	8,199.00	35.00	1.00	11.00
25.	Owyhee Land & Irrigation Co., Ltd., Boise	29,535.43			1,000,000.00	10,000.00	55.00	40.00	100.00
26.	Owyhee Irrigation Co., Ltd., Seattle, Wash.,	3,295.96	1,080.00		80,000.00	70,000.00	45.00	6.50	4.00
27.	Pahsameroi Project, Boise	6,000.00			50,000.00	1,000.00	30.00	4.00	20.00
28.	Portneuf-Marsh Valley Irrigation Co., Downey	11,913.96	10,593.94	1,180.02	275,000.00	433,310.66	35.00	25.00	20.00
29.	Pratt Irrigation Co., Ltd., Salt Lake, Utah	4,674.02	3,429.52	1,244.50	100,000.00	125,000.00	40.00	4.00	8.00
30.	Raft River Reclamation Co., Salt Lake, Utah	50,000.00			1,500,000.00	264,325.00		25.00	100.00
31.	Snake River Irrigation Co., Ltd., Boise	6,500.00	1,200.00	5,300.00	300,000.00	225,000.00	50.00	25.00	20.00
32.	Thousand Springs Land & Irrig. Co., Idaho Falls	6,300.00			50,000.00	15,000.00	30.00	2.00	10.00
33.	Twin Falls L. & W. Co., Twin Falls	244,000.00	197,000.00	36,000.00	1,500,000.00	3,514,906.30	25.00	111.50	590.00
34.	Twin Falls L. & W. Co., Twin Falls	580,000.00			20,000,000.00	200,000.00		140.00	
35.	Twin Falls L. & W. Co., Twin Falls	35,000.00			600,000.00				
36.	Twin Falls N. S. L. & W. Co., Milner	207,144.02	149,009.91	60,000.00	4,500,000.00	4,500,000.00	45.00	100.00	625.00
37.	Twin Falls N. S. L. & W. Co., Milner	3,681.00				2,000.00		22.00	19.00
38.	Twin Falls Oakley L. & W. Co., Milner	45,000.00	28,853.47	5,000.00	1,750,000.00	1,000,000.00	65.00	30.00	90.00
39.	Twin Falls Salmon River L. & W. Co., Milner	127,707.29	67,439.21	15,000.00	2,500,000.00	2,500,000.00	40.00	11.00	235.00
40.	West End Twin Falls Irrig. Co., Des Moines, Ia.	46,000.00	21,000.00	8,000.00	700,000.00	200,000.00	50.00	15.50	184.00
	Totals	2,171,482.94	726,476.89	211,169.70	$66,789,638.05	$22,845,758.22		1,398,93	3,259.07

life and death struggle during which the child, irrigation, was born. Weak and insignificant in its incipiency this child of the desert has grown to be the most wonderful power in all the Rocky Mountain country. Thousands bow in reverence and greater thousands sing praises to this newly crowned monarch—King Irrigation.

Irrigation was first introduced into Idaho at a point where a Mormon colony from Utah settled in the Salmon River Valley in Lemhi county near where Salmon City is now situated. These settlers began farming under irrigation in the year 1854. This settlement was broken up in 1858 and the colony returned to Utah.

Following this settlement another Utah colony located at Franklin, Oneida county, in the month of April, 1860, and engaged in farming under artificial irrigation. It should be remembered that this was the first permanent settlement in Idaho, in honor of which the legislature in the year 1909 set apart the 15th day of June of each year thereafter as a legal holiday, which has since been observed with appropriate ceremonies at Franklin, Idaho, where a monument in honor of the pioneers has been erected.

During the early sixties Ex-Governor McConnell introduced irrigation into the Payette valley near the present town of Emmett, and raised vegetables to supply the mines of Boise Basin. Irrigation spread through the valleys of Bear Lake and Snake river, the Boise valley and other parts of the state, until now every county but one is farming by applying water artificially to the land. In the wonderful accomplishment of irrigation in this state three principal sources are recognized, viz.: First, the individual, or company of individuals, operating upon a mutual or co-operative plan. Second, the construction and operation made possible by the Carey Act. Third, the work of the United States Reclamation Service.

The efforts of the individual are to be recognized first, because he was the pioneer of the work and the one who opened the door to greater possibilities.

Today there are 3,092 independent and co-operative systems that have reclaimed 1,360,534 acres.

Twenty Carey Act projects have reclaimed 937,645 acres. The United States

THE WATER OF LIFE

The corrugation method of distributing irrigation water is rather common in Idaho. After the pastures and the meadows have become set, the flooding method is commonly practiced; however, on some soils the corrugations are opened regularly each spring in the alfalfa meadows. The corrugations let the water down into the soil and thus minimize evaporation.

THE SNAKE RIVER AT MILNER DAM.

The Milner dam was the first of the large diverting dams constructed in Idaho. It is difficult for those unacquainted to understand the marvelous development that occurs so promptly after irrigation water becomes available. The territory that is now irrigated from canals leading out from the Milner dam on both sides of the river has become very prosperous and many portions of it are now under a high state of development. Even the most sanguine dream has come true. Much of the land that formerly sold at from $25.50 to $50.00 per acre has doubled and trebled in value. Many purchasers have taken single crops from their land that yielded a larger return than the original cost of the land. Villages and towns have developed in an almost magic way; three and four story business blocks continue to be built to meet the business requirements. Electrical power lines carry cheap current to all towns and much of the farming country. The first children that were born on the tract are just now old enough to enter school. School buildings and school equipment are equal to the very best to be found in the oldest and wealthiest districts of the Union.

Idaho is just entering upon an era of extensive electric railway construction. One of the first storage battery cars to be operated in a commercial way is now being operated here, and its success, together with the comparatively cheap cost of track construction, equipment and operating will cause hundreds of miles of interurban railways to be built during the next few years. The power necessary to operate the roads is now ready. The traffic that awaits the building of these lines will allow liberal earnings upon the investment to start with the opening of the roads for business.

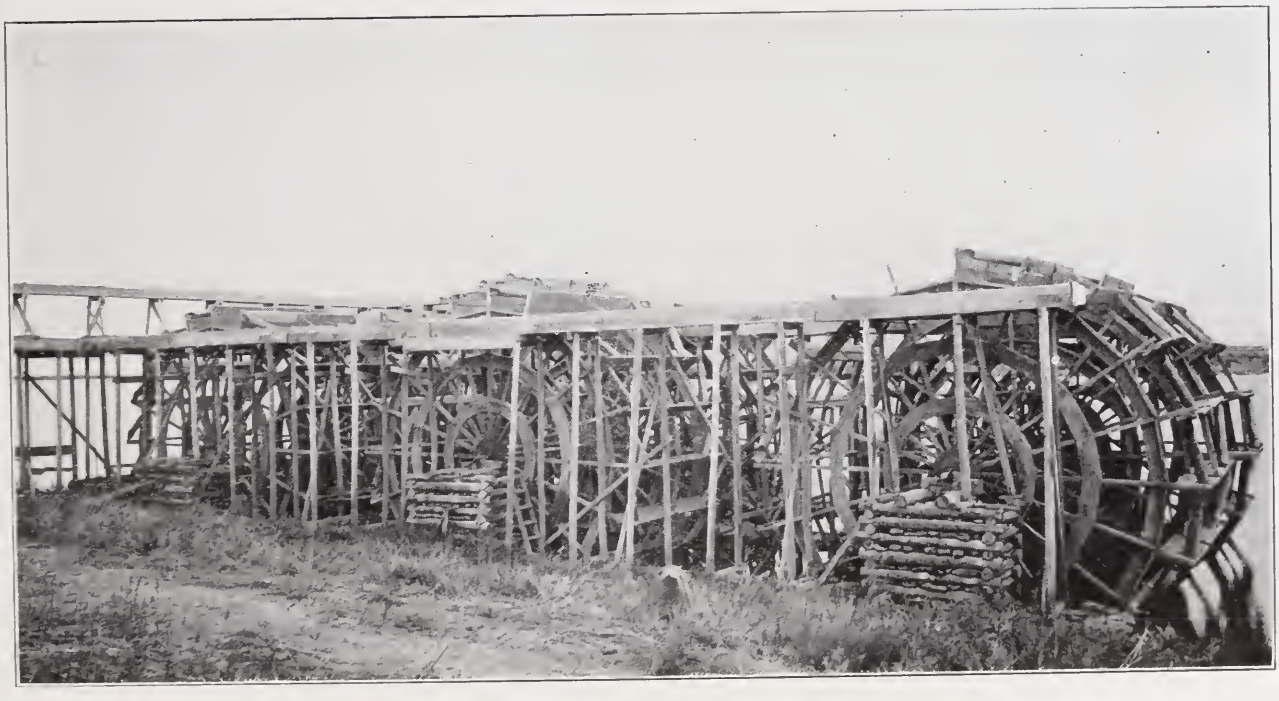
Conditions similar to those prevailing in the vicinity of the Milner dam which is herewith shown are to be found in many parts of Idaho.

Reclamation Service, under the Boise unit and the Minidoka unit, has reclaimed a total of 361,700 acres. The Bureau of Indian Affairs, Department of the Interior, under the Fort Hall project located near Pocatello, has reclaimed 48,000 acres, making a grand total of 2,707,879 acres that have been reclaimed to date.

The following table shows the distribution of this acreage by counties that is now susceptible of irrigation:

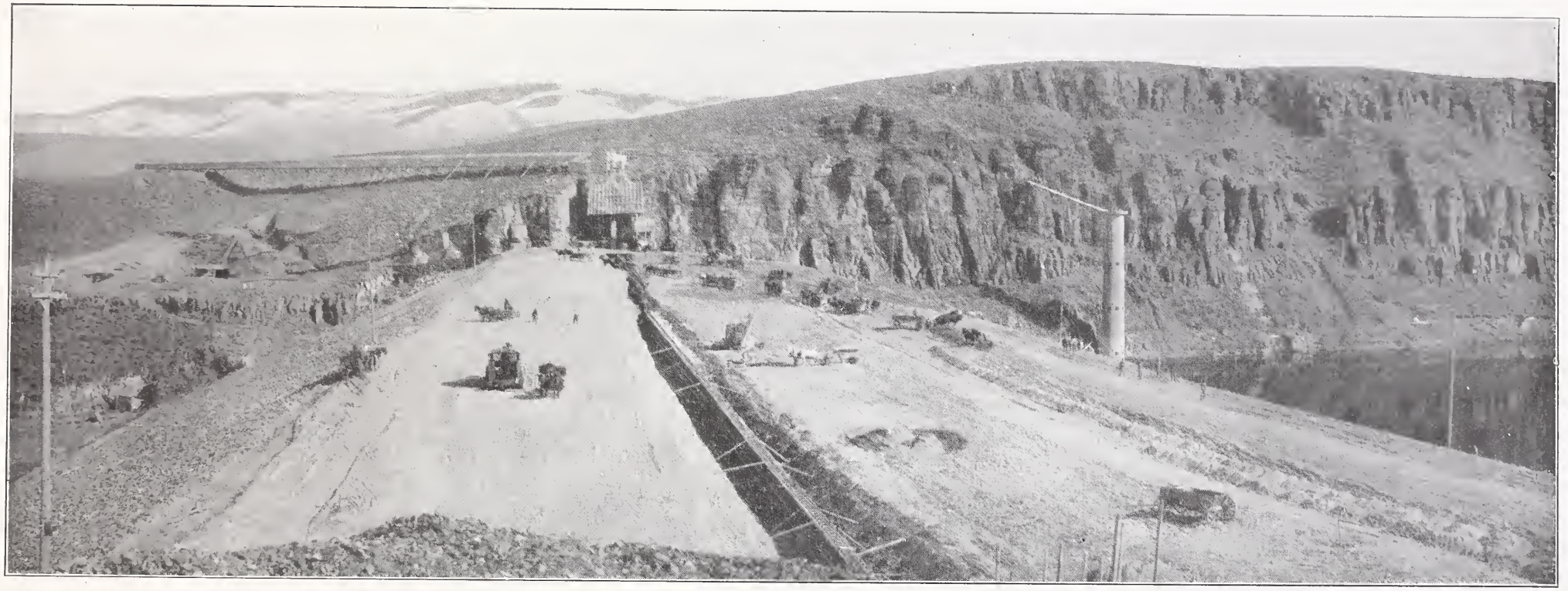
County	Acreage Susceptible of Irrigation	Acreage Being Irrigated
Ada	105,012	99,470
Adams	26,196	23,874
Bannock	136,238	108,310
Bear Lake	68,802	67,540
Bingham	198,057	131,821
Blaine	87,689	81,734
Boise	35,594	28,810
Bonner	1,004	920
Bonneville	136,797	100,668
Canyon	186,236	172,960
Cassia	146,244	80,328
Clearwater	1,023	920
Custer	54,505	41,889
Elmore	27,403	20,448
Fremont	430,244	363,795
Idaho	3,990	3,709
Kootenai	10,632	3,580
Latah *		
Lemhi	43,163	41,707
Lewis	932	704
Lincoln	472,495	165,368
Nezperce	8,200	6,432
Oneida	47,546	46,047
Owyhee	53,088	27,214
Shoshone	64	64
Twin Falls	374,332	176,977
Washington	52,393	47,750
Total	2,707,879	1,843,039

*—No irrigated land is reported in Latah county.



THE OLD FASHIONED METHOD.

The above illustration shows the early type of water power in the west. Mammoth wheels were mounted and anchored at the edge of the streams. The current of the stream caused the wheels to turn, slowly, however, but steadily. Tube buckets were arranged in the wheels so that they filled with water and emptied when they revolved to the highest point. The succession of buckets emptied a steady stream throughout the day and night, raising a stream of considerable size. The battery of wheels herewith shown lifted sufficient water to irrigate a good sized ranch. The height that the water could be lifted was very limited as compared with the modern centrifugal pumps that are now being so extensively installed since the advent of cheap electricity furnished from the power plants located in the natural streams of Idaho.



A PROGRESS PHOTOGRAPH ON THE OAKLEY PROJECT.

The diversion dam which also serves to impound water in the great reservoir for the Oakley project is of the "earth-fill" type. The core-wall was anchored in bed-rock, 35 feet below the river bed. This reinforced core-wall is 3 feet thick from bed-rock to a point 10 feet above the bed of the stream and 1 foot thick to the crest of the dam. The core-wall is set primarily to anchor and to prevent seepage through the structure. The earth-fill on both sides of the core-wall at the base of the dam covers 12 acres; it is 733½ feet thick at the base, and 16 feet wide at the crest. The length of the dam at the crest is 1050 feet.

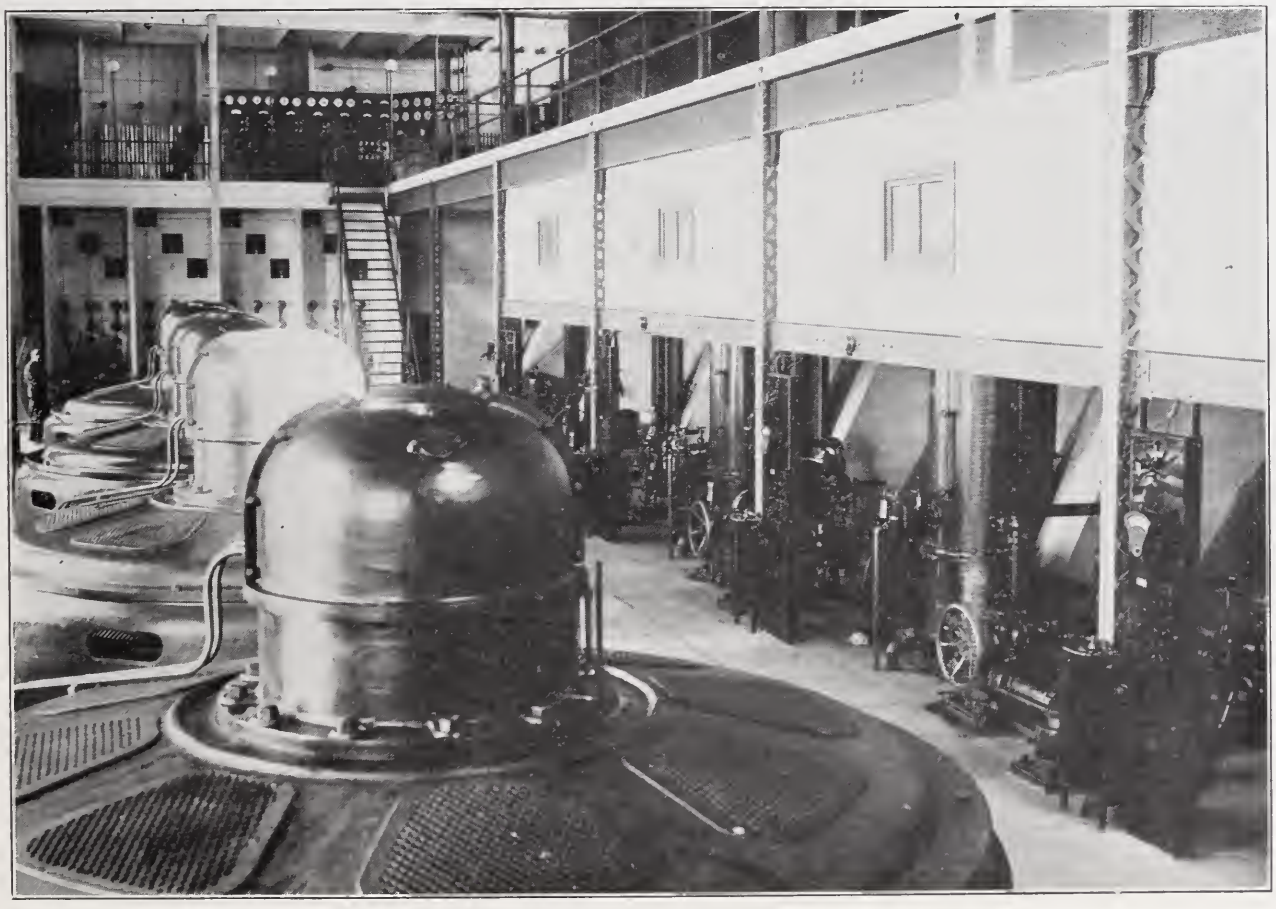
The extreme height of the dam is 143½ feet above low water. The impounded water extends 6 miles above and covers 1,200 acres. The reservoir is one-half mile wide at the widest point and will have an impounding capacity of 75,000 acre-feet. The distributing system is complete in the first 50,000 acre unit which is now being irrigated. The Faris Construction company, which has the contract, advise that the entire project, covering 75,000 acres, will be complete before the close of 1913.

Electrical power has been brought to the tract and is now used by the contractors to operate machinery at the rock quarry, crusher, and for other power services. A rock quarry was opened nearly one mile distant. The tramway structure which is seen in the distance carries material from the quarry to the rock crusher near the dam. The tramway is operated over three sections of belt conveyors, and spans a deep ravine for the distance of 675 feet. The conveyors are 30 inches wide and are supported by "idlers" at intervals. The conveyors are driven by electric motors.

Land under this project is suited for general agricultural purposes and is being developed as fast as the water becomes available. A commendable feature of the water distributing system allows all water that may be wasted from one farm to be picked up by parallel laterals immediately below, therefore all water is utilized.

The largest contiguous body of land that was irrigated in the early history of this state is found in the upper Snake river valley. From American Falls north there were greater opportunities with a less expenditure for diversion works and canal construction in this district because the banks of the river were not high and there are wide, level valleys on either side of the river. Besides the Fort Hall government project, nearly 1,000,000 acres have been reclaimed in this district by farmers' co-operative and independent enterprises. The federal census of 1910 furnishes the following data with reference to irrigation in Idaho:

Independent enterprises, number	3,092
Ditches, total length, miles	12,759
Main ditches, number	3,209
Length, miles	7,662
Lateral ditches, number	3,359
Length, miles	5.097
Reservoirs, number	243
Capacity, acre feet	1,742,303
Flowing wells, number	62
Capacity, gallons per minute	7,200
Pumped wells, number	24
Capacity, gallons per minute	2,826
Pumping plants, number	58
Engine capacity, horse-power	7,065
Pump capacity, gallons per minute	278,569
Acreage irrigated with pumped water	19,825
Total cost of irrigation systems	$40,983,682
Average cost per acre	17.18
Average annual cost of maintenance and operation, per acre	.64



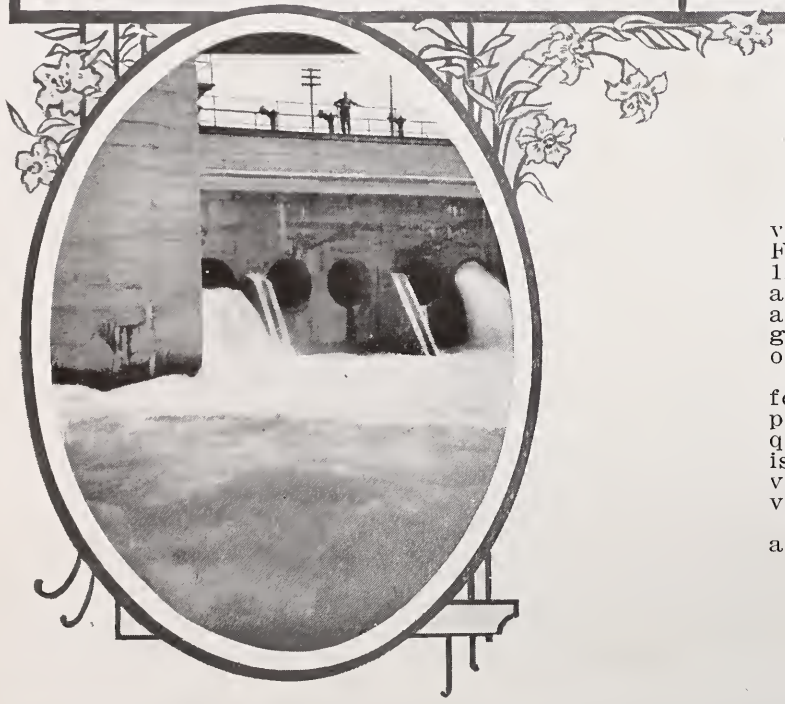
INTERIOR OF MINIDOKA POWER PLANT.

Showing a part of the generators, switchboard and other equipment in the Minidoka power plant.

The U. S. Reclamation service on the Minidoka Project have completed the installation of turbines for generating 10,000 electric horse power. This current is carried over 38.4 miles of high voltage transmission lines where the mammoth pumps are installed which lift water to the higher levels immediately above and contiguous to the tract that is irrigated from the gravity canals. Forty-eight thousand seven hundred acres have been reclaimed under the pumping system, the average lift being 66 feet.

The Minidoka dam in the Snake river forms an auxiliary storage reservoir in which 53,500 acre feet of water is stored above the spillway crest by means of flash-boards. This furnishes the turbines with a maximum head amounting to 46 feet.

The irrigation season covers only the summer period. The surplus current during the winter period is sold to the farmers living upon the tract and also to the near-by towns upon a basis of .014c per k. w. hour for heating purposes. Lighting is on a basis of 7c per k. w. hour with a reduction for quantities.



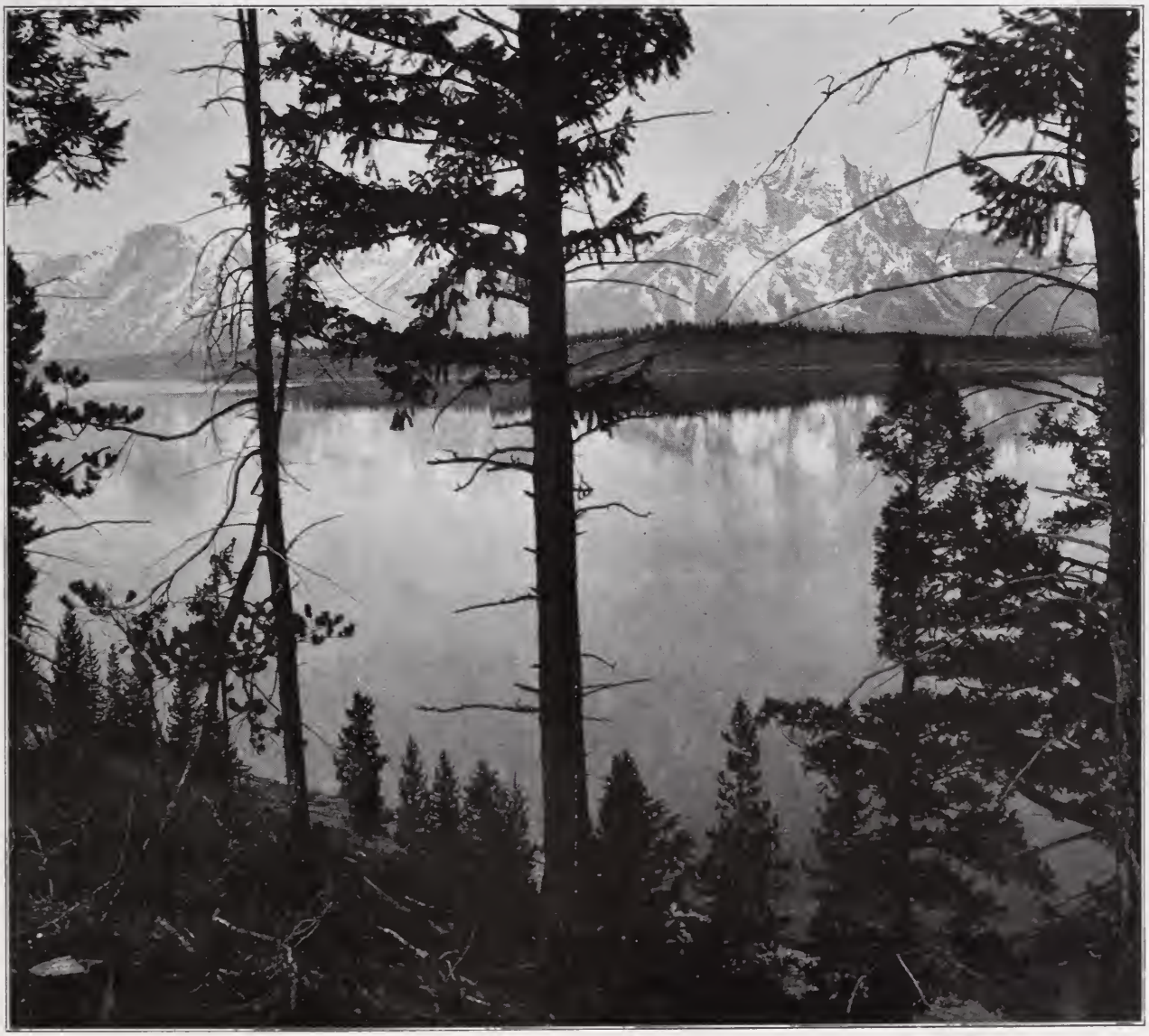
THE SNAKE RIVER AT IDAHO FALLS.

Showing three views of the falls in the Snake river at Idaho Falls. The lower view shows a section of the municipal hydro-electric power plant. The city of Idaho Falls now owns its own electrical power plant. The plant is now equipped to generate 1,000 horse power and additional equipment can be readily installed that will give a capacity of 5,000 horse power. There is sufficient commercial value and scenic value attached to these beautiful natural falls to warrant the town in aspiring to become greater than a Minneapolis, especially when it is remembered that great quantities of splendid wheat are grown in the immediate vicinity.

The commercial hydro-electric plants which furnish power for pumping water for irrigation, where quantities of current are needed, on a basis of from $20.00 to $28.00 per horse power for the irrigating season. This range in price is determined by the quantity of current delivered and character of transmission line from which delivery is made. Where transformer stations are conveniently located so that but little low voltage wire is required, the rate is less than where the current is taken from a low voltage wire where there is greater loss in transmission.

Manufacturing plants which take current during the twelve month period receive a lower rate.

Large sums have been expended during 1911 and 1912 since the above census report was made. It will be observed by the accompanying table showing Carey Act projects that large additional areas are contemplated for entry in the immediate future. In the brief time since the Carey Act became operative, settlers have proved up on 453,902 acres. The progress Idaho has made in the science of irrigation is phenomenal. From a beginning so insignificant as to consist of flowing water from a stream to a truck patch nearby through a plow furrow, practical irrigation in this state has grown to enormous proportions. The most recent irrigation enterprises of this state are far beyond the dreams of a few years ago. They represent some of the greatest engineering feats of the age. Mountains have been tunneled, flumes have been built across rivers, gigantic dams have been constructed across the waterways of the state, and vast storage reservoirs have been built to impound a



"GUARDIAN SENTINELS OF THE GREAT SNAKE RIVER."

The scenic beauty and grandeur of the Tetons can be fully appreciated only when seen with the eye. The photograph here reproduced is faithful and gives some idea of the magnitude of the "Guardian Sentinels of the Great Snake River." This rugged chain of mountains is commonly regarded as the most beautiful of all to be found within the Rocky range, rearing their heads to an altitude of 14,600 feet.

Clinging to the rugged mountain sides, the snow begins to melt in early summer and in many of the ravines and canyons the snow water is frozen into great bodies of ice which give a rather regular flow of water under the melting influence of the summer sun. The mountain sides are never entirely free from snow and ice.

The pure, cold water supplied by the melting of the snow and ice throughout the entire summer offers the mountain trout its natural habitat in the lakes and rivers below. The waters of the streams and lakes of these great mountain ranges have been commercialized and utilized for the use of thousands of people but this has not sacrificed the natural beauty of their surroundings.

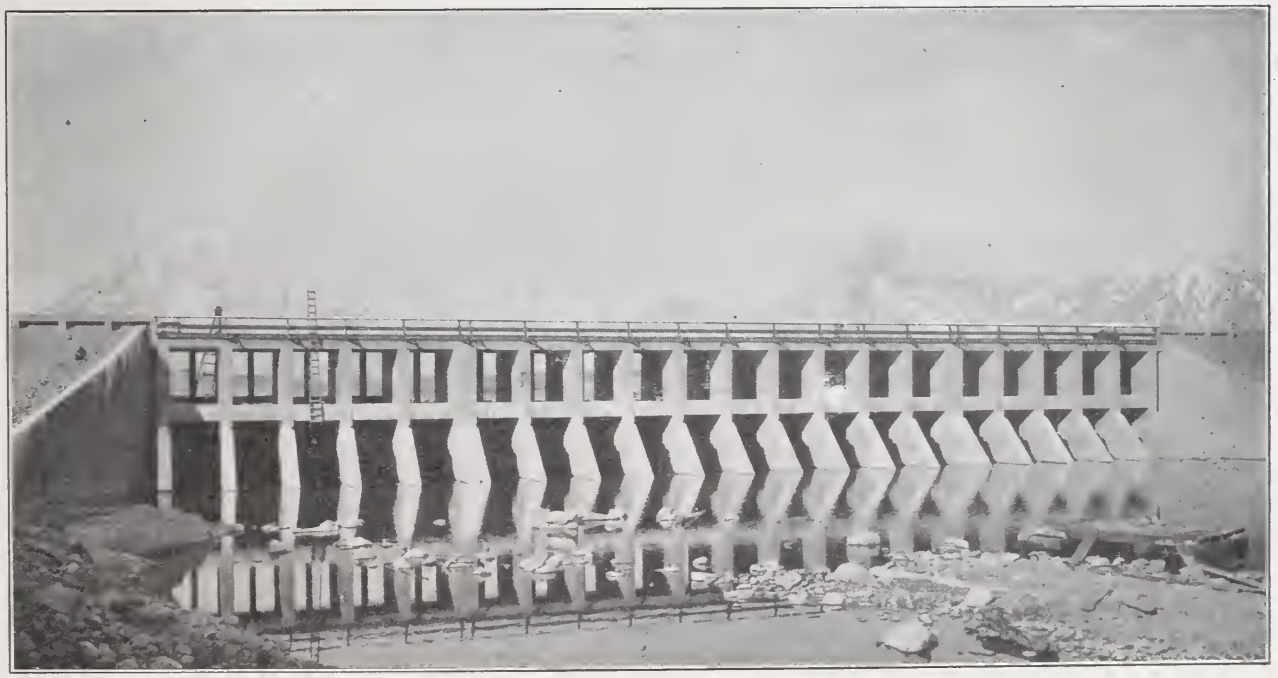
It is a great asset for any state to have such a generous and thoroughly reliable water supply which is assurance for all time to come.

WHERE THE IMPRISONED WATERS FLOW.

Showing how mammoth reinforced concrete pipe-lines are laid. It is sometimes necessary to carry irrigation water across depressions, using the inverted siphon flume. A concrete pipe-line with cemented and reinforced joints, as shown in this instance, will be servicable for all time to come. There will be no upkeep expense.

reserve water supply. Siphons have been built over hill and dale, and the operation of gigantic pumps to overcome gravity defiance are a few of the undertakings and accomplishments.

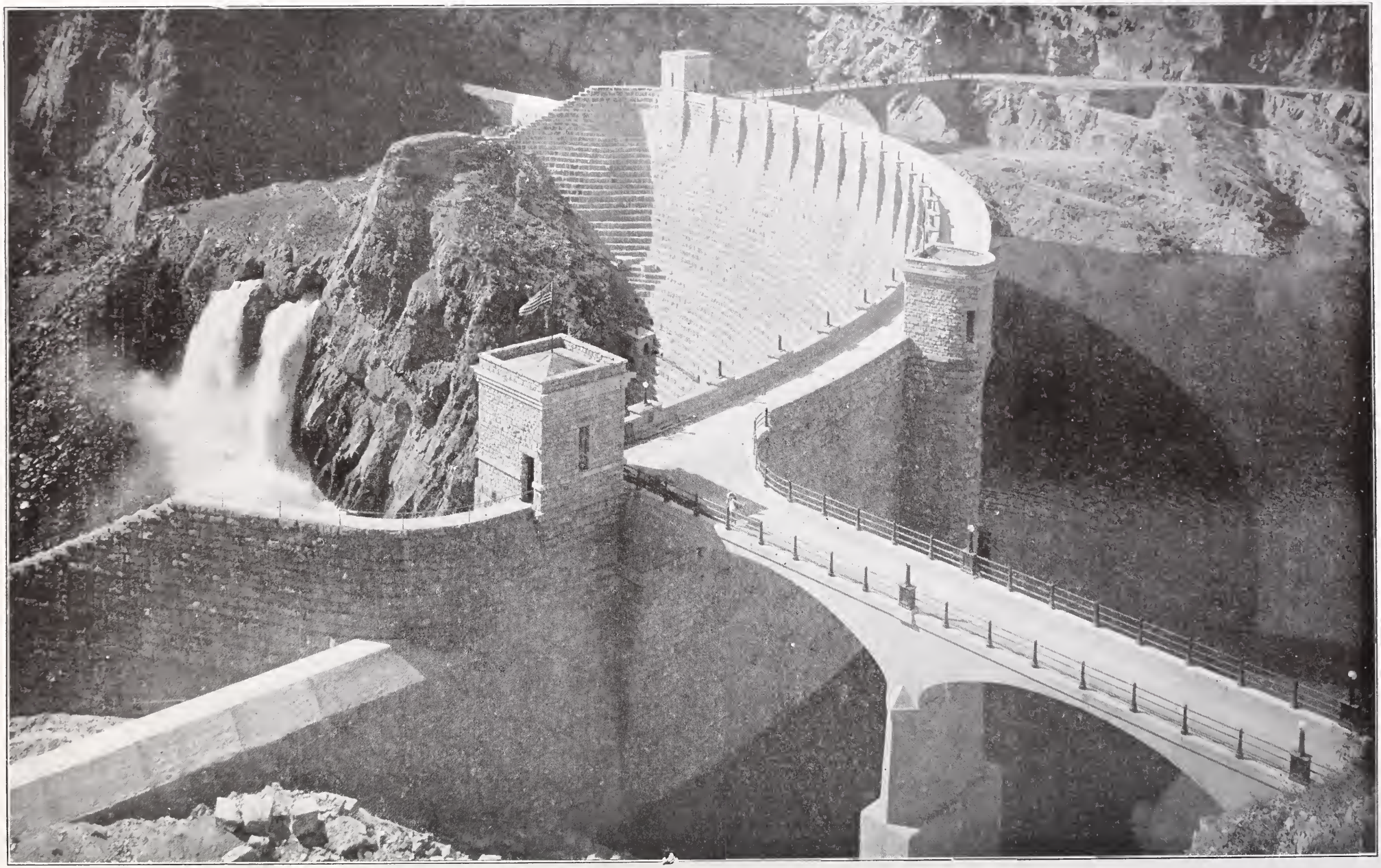
The most stupendous undertaking thus far in Idaho, if not in the world, is a proposal to irrigate 580,000 acres of land in Owyhee county, which will require the expenditure of $21,000,000. To accomplish this it will require the construction of a main canal over 140 miles in length and hundreds of miles of laterals, and a concrete masonry dam across the Snake river just above the American Falls. At this point the Oregon Short Line railroad passes immediately over the falls. This dam will be 90 feet high and 8,000 feet long, forming a reservoir with an impounding capacity sufficient to store 3,000,000 acre feet of water. This impounding reservoir will inundate 70,000 acres of land and when completed will be the largest artificial reservoir in the world. This will impound a sufficient quantity of water to spread 36 inches deep covering 1,000,000 acres. The amount ordinarily used for irrigating during the growing season is about three acre feet, or sufficient water to cover one acre of land 36 inches deep if applied all at one time. The annual rainfall in the corn belt of the middle west states averages less than 30 inches throughout the entire year. Irrigation water is applied only when needed, during the growing season. Idaho today has forty Carey Act projects, one-half of which are now in operation. In some instances more than one segregation has been granted to a single company. Up to date some 65 regular applications for segregations of land under this act have been filed in the general land office; forty have been approved ,five have been rejected and twenty are pending. The cost of constructing the canals, dams and reservoirs in connection with these forty projects will reach the enormous total of $66,789,638. The amount expended to date upon Carey Act projects is $22,845,758. To date 8483 entries have been made by bona fide settlers, and there are still open to entry 211,169 acres. Three of these great projects, the American Falls Canal & Power company, serving 57,241 acres, the Twin Falls Land & Water company, reclaiming 244,000 acres and the Canyon Canal company, embracing 5,800 acres, have been successfully completed and turned over to the settlers.



PRISON GATES ON JACKSON LAKE.

Showing part of the head gates that control the waters of the great Jackson Lake Reservoir. A part of the Teton range is seen in the distance.

A 16-foot wall and head gates have made is possible to impound 440,000 acre feet of water as a reserve supply for irrigation needs in the Snake river valley. Not quite all of this water is available for irrigation, however. This great reservoir is located at high altitude (6,700 feet) where evaporation is small. In October, 1912, the waters were gradually released from this great reservoir. They had served the purposes that had prompted the building of the structure, making it possible to impound this great reserve supply and have it available if needed. The waters were not needed for irrigation purposes this year and were released at the close of the irrigation season. The impounding of these vast volumes of water serve to protect the diversion dams, hydro-electric power plants and also protects the other structures in the streams against damage from the flood waters of the great Snake river. The impounding wall and head-gates will be raised 13 feet higher, thus impounding an additional 330,000 acre feet of water as a further reserve for use, if needed, in the irrigated valleys below.



AS THE ARROWROCK DAM WILL APPEAR WHEN COMPLETED.

Idaho has three projects under construction by the United States government. Under the United States Reclamation Service, the Minidoka, situated on the Snake river near the Twin Falls tract, and the Boise project in the Boise valley; the Fort Hall project near Pocatello was built and is operated by the Bureau of Indian Affairs, Department of the Interior. These enterprises include both gravity and pumping systems. These projects are practically completed except the impounding

THE ARROWROCK DAM.

The accompanying photograph, which was made in December, 1912, shows the progress that has been made in constructing the great Arrowrock dam in the Boise river. It will be observed that the water is being carried through the tunnel in the mountain, diverting the stream while excavating for the foundation and while the structure is being erected. The diversion tunnel is 30 feet wide, 25 feet high and 500 feet long. It is driven through solid granite. The bottom and sides are lined with concrete. The top is lined with timber. This tunnel has a carrying capacity of 20,000 second feet, or sufficient capacity to carry the entire flow of the river during a flood period.

It was necessary to excavate 91 feet in places in order to thoroughly anchor the permanent structure in solid granite bed-rock. The maximum height of the dam is 351 feet above the river bed. This means that the extreme height of the structure from the bottom of the foundation to the top of the dam will be 442 feet. The dotted line indicates where the top of the dam will be inthe finished structure. When completed it will be the highest dam in the world. The following table will give some idea of the magnitude of the project:

Maximum height, feet	351	Area of Foundation, about one acre.	
Thickness at base, feet	240	Excavation for dam, cu. yds.	250,000
Width at top, feet	16	Concrete in dam, cu. yds.	530,000
Radius of curvature, feet	662	Gates and accessories, tons	1,000
Length of crest, feet	1060	Excavation for spillway, cu. yds.	300,000
Length of spillway, feet	400	Concrete in spillway, cu. yds.	10,000
Depth foundation below river bed, ft.	91	Capacity of reservoir, acre-feet	230,000

Length of the reservoir, about 18 miles, and includes both the main Boise river and the south fork of the Boise river.

The water from the Arrowrock reservoir is discharged into the Boise river and diverted into the New York canal about 8 miles above the city of Boise and about 15 miles below Arrowrock.

Provision will be made in the dam for the installation of hydro-electric power with capacity for generating 10,000 horse power during the greater part of the year.

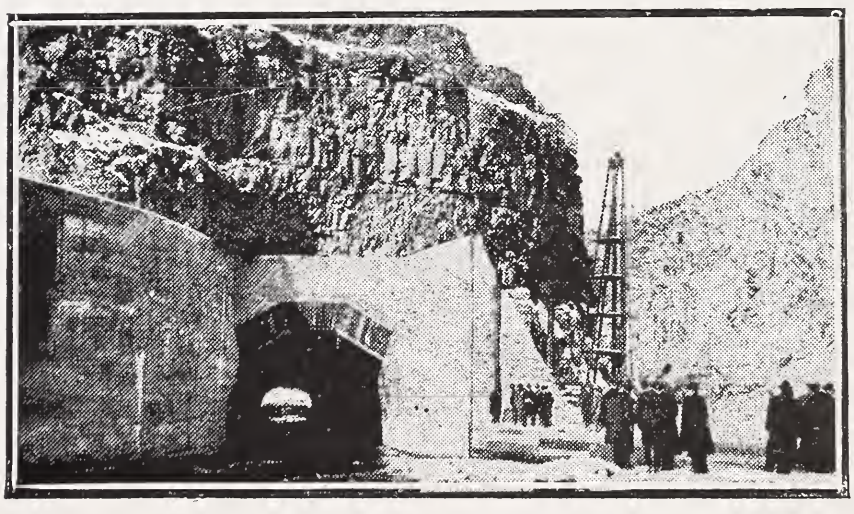
CONTROLLER GATES ON DEER FLAT RESERVOIR.

The United States Reclamation Service has completed a large artificial reservoir that furnishes a reserve supply for about 68,000 acres of the Boise project. This reservoir is located in the Caldwell-Nampa district and has a shore-line of 27 miles. This mammoth reservoir is filled during the winter and spring season and during the flood period in June and July, diverting water from the Boise river.

When the Arrowrock dam is finished, the 230,000 acre-feet of water that will be impounded there will supplement the 186,000 acre-feet of reserve supply in the Deer Flat reservoir. This is a total of 416,000 acre-feet of stored water that will be available for the 243,000 acres of irrigable land under the Boise project.

This is the equivalent of about 1¾ acre-feet of storage water that will be available for the late-season irrigation. It is extremely fortunate that the largest flow during what is commonly called the "flood water period" occurs in June, and usually extending into July. The largest volume of irrigation water is required during the month of June. It will be readily understood that the accumulated surplus need be stored only a few weeks in order to render its greatest service for the needs of late-season crops, such as the third and fourth cuttings of alfalfa and for fall seeding. In most districts irrigation ceases upon small grain with the close of the month of June. The summer surplus flood water occurs later in the streams of Idaho than in other states. This is accounted for by the fact that the watershed for Idaho streams lies mainly at high altitude and from the further fact that a very large portion of the water-shed has a northern slope; then,too, the amount of rainfall and water from the melting snow and ice is checked in its downward course by the vast areas of natural forests, which serve to regulate the distribution of the natural precipitation and the melting snow water.

Attention is directed to the substantial character of the structures found generally in Idaho irrigation projects. The accompanying photograph shows massive concrete and steel structures with powerful controllers that operate the gates which regulate the distribution of water from the reservoir to the distributing laterals. These structures are built for dependable service.



Showing a short range view of the tunnel that carries the waters of the Boise river, while the Arrowrock dam is being constructed. This tunnel is large enough to allow two freight trains to pass through at one time, and the brakeman could sit on the caboose undisturbed by the top of the tunnel. The tunnel will carry the entire flow of the river, even at flood stage, which amounts to about 18,000 second feet of water.

reservoir created by the building of the Arrowrock dam on the upper Boise river which is now under construction.

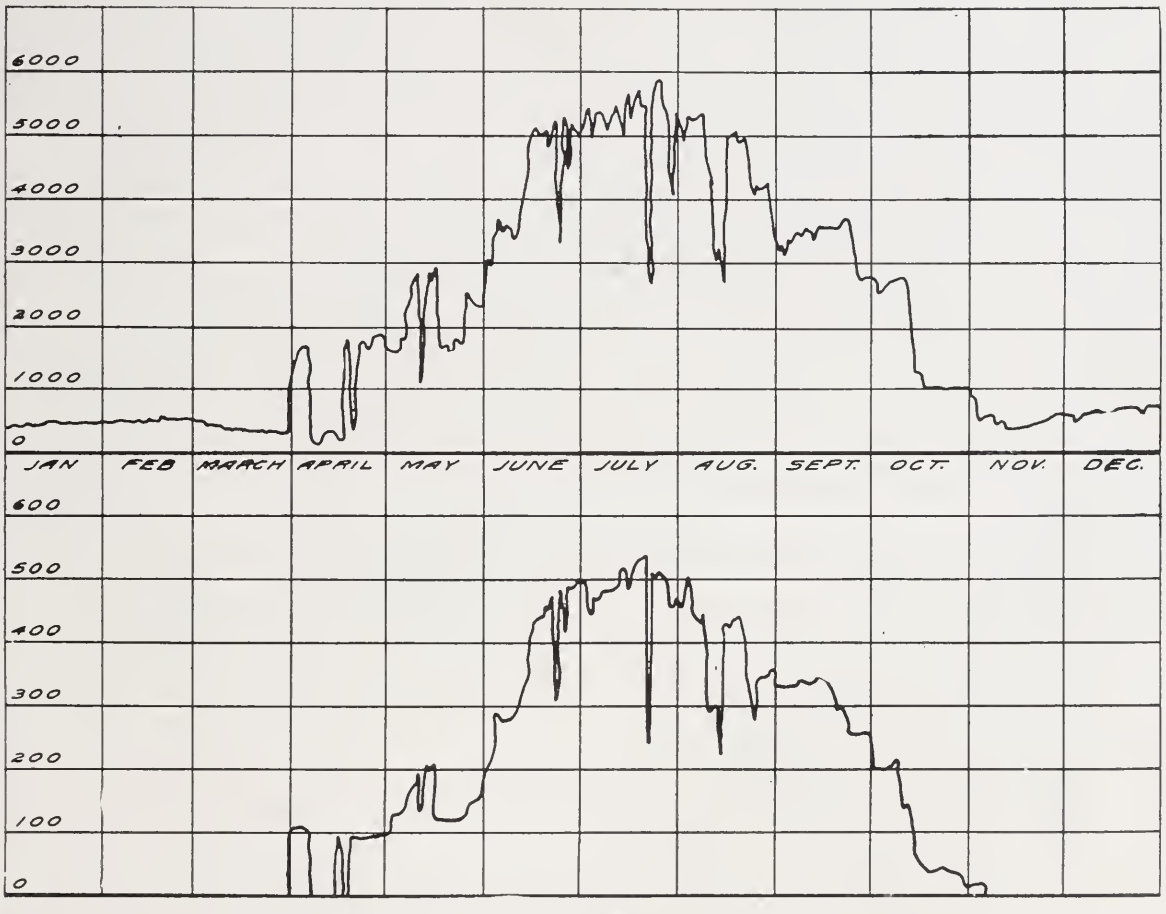
The water available for irrigation in Idaho is being greatly supplemented through the building of reservoirs that impound the flood waters and hold them available for the irrigating season. In 1910 the federal census showed 243 of these reservoirs constructed with a capacity aggregating 1,742,303 acre feet of water. The Jackson lake is one of the largest of these impounding systems. The United States Reclamation Service is able to impound 440,000 acre feet of reserve water in this system. Definite plans have now been made whereby the retaining walls and gates will be raised 16 feet and impound an additional supply amounting to 330,000 acre feet.

Only a comparatively small area has as yet been served by pumping irrigation water from wells.

The 1910 federal census showed 58 pumping plants requiring 7065 engine horsepower capacity to irrigate lands being served by various pumping systems. A large number of plants have been installed during the past two years. The largest completed plant now serves 15,000 acres with an average lift of 66 feet. The Gem Irrigation District, when completed, will require a pumping capacity to serve 36,000 acres.

The extensive development of hydro-electric power from the natural streams of the state and the wide distribution of these power lines covering large areas of territory is furnishing a wonderful impetus to irrigation pumping.

Some of the great diversion dams and impounding dams are also used for generating electricity which is used for pumping water to higher levels. The construction and operation of hydro-electric power plants in Idaho is closely affiliated with irrigation.



WHEN THE WATER IS NEEDED.

The upper table shows the load curves expressed in kilowatts each month on the Minidoka pumping project. The lower table indicates the volume of water pumped during the irrigating season. It will be observed that the "peak" load occurred in July.

A larger amount of irrigation water was required during the month of June when water was plentiful than during the month of August. The high water period occurs during June and the early part of July, ordinarily.

These tables indicate a fair average distribution of the annual requirements for irrigation in the state of Idaho. The demand for irrigation water is about the same from the gravity systems as from the pumping systems.

MEASUREMENT OF WATER.

The accompanying table is adapted from the government engineer's report. The table shows the depths a given number of miner's inches per acre with continuous flow will cover the land during irrigation seasons of different length. It may be explained further that a continuous flow of a cubic foot per second will supply enough water to cover an acre to a depth of almost exactly 24 inches, or 2 feet, in 24 hours. Thus a stream of one cubic foot per second will cover an acre one inch deep in an hour, or ten acres an inch deep in ten hours. A cubc foot per second equals almost exactly 50 Idaho miner's inches, or 450 gallons per minute.

Miner's inches per acre	Length of Irrigation Season Days	Depth Covered in Feet	Acres served by Miner's Inch	Acres served by 1 second foot
One-eighth	100	.496	8	400
	120	.595	8	400
	150	.744	8	400
One-fourth	100	.992	4	200
	120	1.190	4	200
	150	1.490	4	200
Three-eighths	100	1.488	2 2-3	133 1-3
	120	1.785	2 2-3	133 1-3
	150	2.231	2 2-3	133 1-3
One-half	100	1.983	2	100
	120	2.380	2	100
	150	2.975	2	100
Five-eighths	100	2.479	1 3-5	80
	120	2.975	1 3-5	80
	150	3.719	1 3-5	80
Three-fourths	100	2.975	1 1-3	66 2-3
	120	3.570	1 1-3	66 2-3
	150	4.463	1 1-3	66 2-3
Seven-eighths	100	3.471	1 1-7	57 1 7
	120	4.165	1 1-7	57 1 7
	150	5.207	1 1-7	57 1-7
One	100	3.967	1	50
	120	4.760	1	50
	150	5.950	1	50

The Duty of Water depends upon a variety of factors, which are in the order of their importance: (1) character of soil and subsoil; (2) climatic conditions; (3) the fertility of the soil; (4) diversification of the farm crops; (5) use of rotation; (6) preparation of the land; (7) kind of crop, and others of lesser importance.

The Duty for projects planted to diversified crops on the average clay loam soils of south Idaho should be sufficient so that two acre-feet per acre may be retained on the land.

Very impervious soils or shallow soils require slightly more water than deep medium soils.

A tight, impervious subsoil that roots can penetrate increases the Duty.

More water is required where porous subsoils exist.

Gravelly soil may require two or more times as much water as the medium soil, the amount depending upon the porosity of the soil, the distance water is flooded, and the preparation of the land for irrigation.

As much as 80 per cent of the water applied to gravelly soil is sometimes lost to the use of the crops from deep percolation.

Gravelly soils should be irrigated by flooding large heads of water short distances.

Cultivated crops, all other things being equal, require less water than uncultivated crops.

Winter grains require less water than spring grains.

The time of application has a decided effect upon the yield of grain.

Alfalfa, clover and pasture require almost exactly twice as much water on the same soil as the grains.

An average of approximately 20 per cent of the amount applied is wasted from grain and alfalfa on the clay loam soils.

Diversification of crops greatly increases the Duty.

Very little water is required by a project either earlier than May or later than August.

The need for water is not constant during the season for a project with diversified crops; about 1 per cent of the season's supply is required during April, 16 per cent during May, 32 per cent each month during June and July, 16 per cent during August, and 2.5 per cent during the first half of September, after which there is very little need for water.

Approximately 64 per cent of the total supply for the season is required by a project devoted to diversified crops during the months of June and July.

Rotation systems increase the Duty and have many other advantages.

Most canals divert more water than is actually required, both early and late in the season.

The amount of water that will produce the largest yield of a certain crop, on a certain soil, is not always the "economic" Duty.

The value of land, the cost of water, the value of the crops produced, and the cost of producing them, as well as the amount of water that will produce the largest yield, must all be taken into consideration when determining the economic Duty for any project.

Irrigation Farming

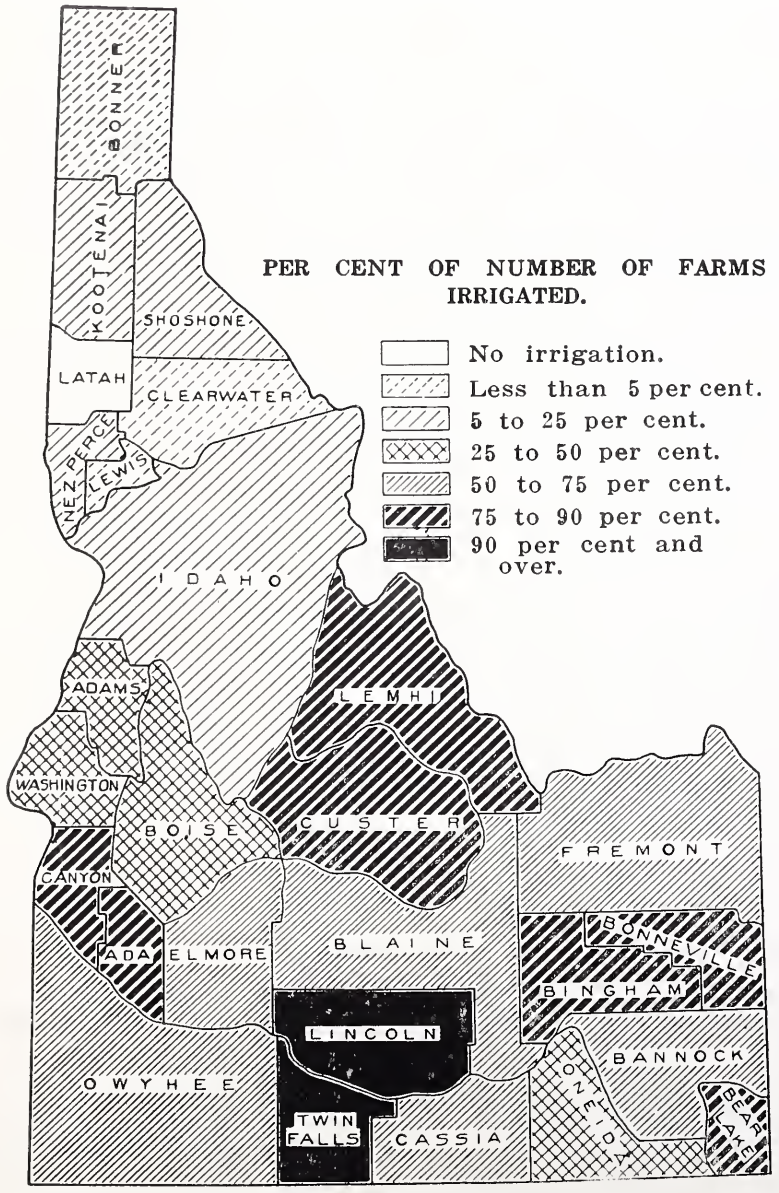
IRRIGATION has become a science. It is one of the newest of agricultural sciences. Irrigation farming has been practiced for many years but the best methods of applying irrigation water have received scientific thought and investigation only during the past few years.

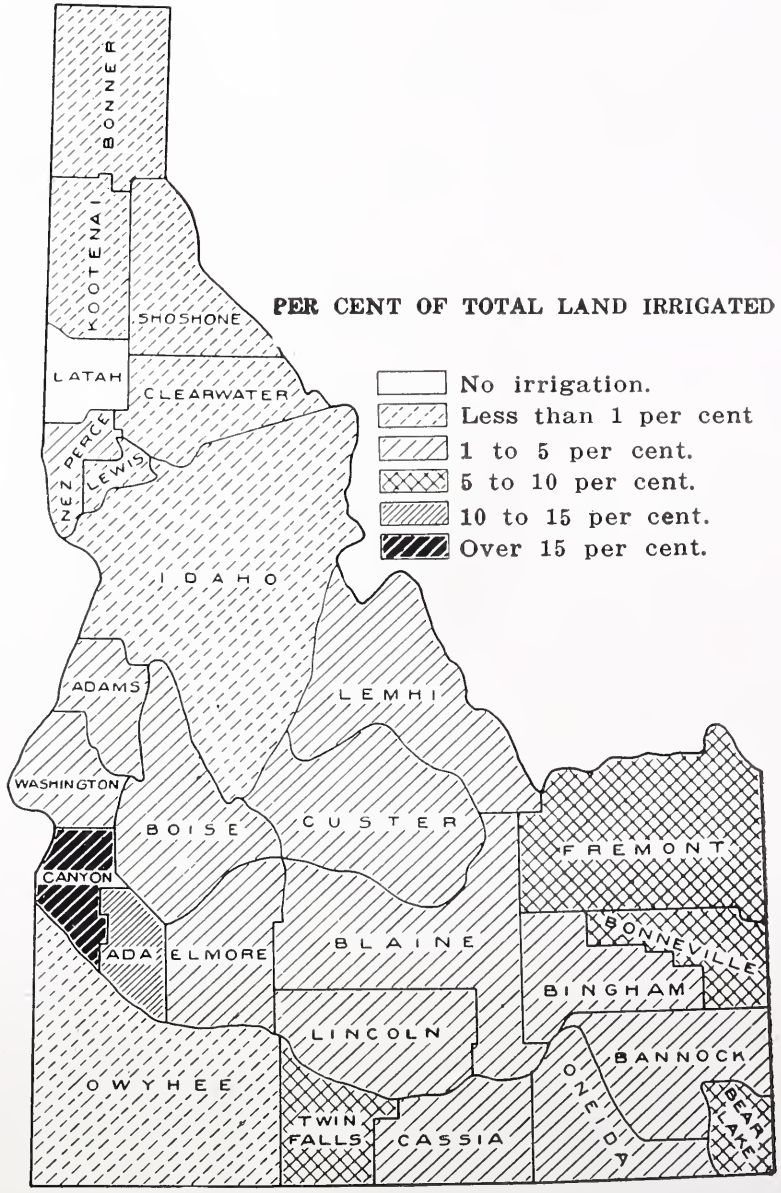
Elsewhere the water supply and irrigation projects of the state have been treated. Idaho is exceedingly fortunate in having such splendid water supply and irrigation systems. All structural work upon irrigation projects must be done under the supervision of the State Engineer or Government Engineer. The Carey Act companies and the United States Reclamation service deliver the water within 160 rods of each legal subdivision. The farmer must prepare laterals for carrying the water upon his own premises and arrange his own system for the distribution of irrigation water upon his farm.

The most highly developed irrigation methods are those where irrigation water is delivered under pressure in pipe lines as shown in the accompanying photograph. So far, the pipe system of delivering water has been installed only in orchards and upon small tracts where intensive farming is practiced. Wood pipe treated against decay and concrete pipes have been used in these systems. Where there is pressure in the system the concrete pipes are reinforced; this makes it possible to obtain the maximum use of water and the minimum waste; it also facilitates the application of irrigation water and requires the least amount of labor. The beginner with limited means, however, must use the less expensive plan of distributing water through small ditches commonly called laterals. The photograph herewith shown illustrates the "corrugation" method of surface irrigation which is commonly practiced over the largest part of the irrigated area of Idaho. Where the land has a uniform, gentle slope, and not inclined to readily wash, the "flooding" method is practiced. On hillsides corrugations may be laid out at an angle that reduces the grade and thus checks the tendency to wash. Where pasture and meadow lands have been well leveled the flooding method is extensively practiced. It has been found, however, that letting the water down to the subsoil in the deep corrugations, that evaporation is very much less, and therefore a higher irrigation duty of the irrigation water

CONCRETE LINED CANAL.

Many of the larger canals are now lined with concrete. The smooth sides facilitate the flow of the water; there is less evaporation where the water movement is rapid; there is no loss of water through seepage and there is absolutely no danger of the banks giving way and causing a serious break. There is almost no upkeep cost to the sections of the canal that have concrete lining.





GRAPHIC MAP RELATIVE TO IRRIGATION IN IDAHO.

can be had through the flooding practice which causes a considerable loss through evaporation.

DEVELOPING A NEW FARM.

The new settler deserves to know something of the probable cost of erecting buildings, fences, clearing and leveling land and otherwise developing a home in a new country.

In the farming districts adjacent to timber lands local sawmills furnish common grades of lumber at the mill at from $12 to $16 per thousand feet. In many districts of the state the settler avails himself of the privilege granted by the Department of the Interior whereby the settlers are entitled to free saw timber from the National Forests up to $20.00 in value, equivalent to about 10,000 feet B. M., which is estimated to them by the cruisers, upon a stumpage basis. The settler cuts the trees and draws them to the mill and pays so much per thousand to have the logs manufactured into lumber. The settler may buy additional standing timber for his exclusive use in any reasonable amount. Timber so purchased costs only the actual expense to the government of making the sale and would rarely exceed 50 cents per thousand feet, B. M., on a stumpage basis. By this plan the settler is enabled to put on improvements at a very moderate cost by doing the work himself; two or more neighbors often work together in the development of their farms.

A large part of the irrigated districts are too remote from the timber regions for the settler to obtain his supplies direct from the mill. The lumber yards which

AN IDAHO OAT FIELD.

The above field of oats was grown where sub-irrigation is practiced. In some districts of Idaho it is possible to raise the water-table in the soil so that the growing crops may take their supply of moisture through sub-irrigation.

The native habitat of the oat plant in Norway and Scotland is in a cool, moist soil at moderately high altitude, where the nights are cool and climatic conditions unfavorable for the development of rust or other fungi that may attack the foliage and straw of the plant. Idaho has similar conditions. The generous amount of mineral elements of plant food in the soil in the better oat growing districts of Idaho, such as Ashton, Grangeville and other moderately high altitudes, produce a plump, heavy oat that yields an unusually high percentage of meat, and a comparatively small percentage of hull.

In Idaho the threshing machines set the weigher to dump at twenty pounds per one-half bushel, or forty pounds per bushel. The standard weight per bushel usually is thirty-two pounds. It is not uncommon to find oats "machine run," that will weigh forty-eight pounds to the bushel. Such facts will certainly encourage the development of large cereal factories in the districts where such large quantities of these superior oats are grown. There are near-by streams where electrical power is being generated that will furnish power for the mills at minimum cost. There are nearly as many bushels of oats produced in Idaho as wheat. The 1912 crop aggregated 15,016,048 bushels. Idaho is becoming a great oat state.

ONION SEED.

Showing an onion field on the premises of C. C. Stoop, in the Boise valley. A four-acre field yielded 1639 pounds of seed. The seed was grown under contract for an eastern seed house at 25c per pound; the seed bulbs were furnished by the seed house. This brought $409.75, or $102.40 per acre for the seed crop. Mr. Stoop also harvested 15,200 pounds of bulbs or sets from one acre which were grown under contract on the basis of 65c per hundred. The crop brought him $98.80 per acre. The five acres devoted to onion seed and onion bulbs averaged $101.71 per acre cash. T. N. Ragsdale, a neighbor, grew 2,100 pounds of seed from three acres in the year 1911, which he sold at 25c per pound, bringing him $525, or $175 per acre. In 1912 he harvested 40,000 pounds of onion bulbs from two acres which netted him $130 per acre.

Where seed is the crop to be produced the bulb is set in the fall and allowed to root well before winter sets in. The seed is harvested the following autumn. If bulbs are to be produced the seed is sown early in the spring. The crop does not require expensive, special machinery or tools; such equipment as is found upon any market gardener's premises is all that is needed except a simple threshing device for th seed crop.

Something more than 400 acres in the Boise valley will be devoted to the 1913 onion seed and onion bulb crop. It is a cash crop and does not require a large outlay of money for help. The highest cash returns from the onion seed crop reported during the year 1912 was $182.75 per acre.

ONION BULBS AND ONION WEEDERS IN THE TWIN FALLS COUNTRY.

are located throughout the state furnish all kinds of building material. The prices of lumber range from $18 to $28 per thousand; the higher grade finishing lumber brings more. The price upon windows, doors and mill work corresponds to the prices that generally prevail in older states. Nnmber one split cedar fence posts retail at from fourteen cents to eighteen cents each. Barbed wire and woven wire fencing, nails and hardware sell a trifle higher than in the middle west.

The beginner's cottage may be an extremely modest $100 home; or for $350 sufficient material can be purchased to build a very comfortable cottage home. From three to four thousand feet of lumber costing $20 or $26 per thousand will build a barn large enough to take care of the beginner's needs.

FARM TOOLS FOR THE BEGINNER.

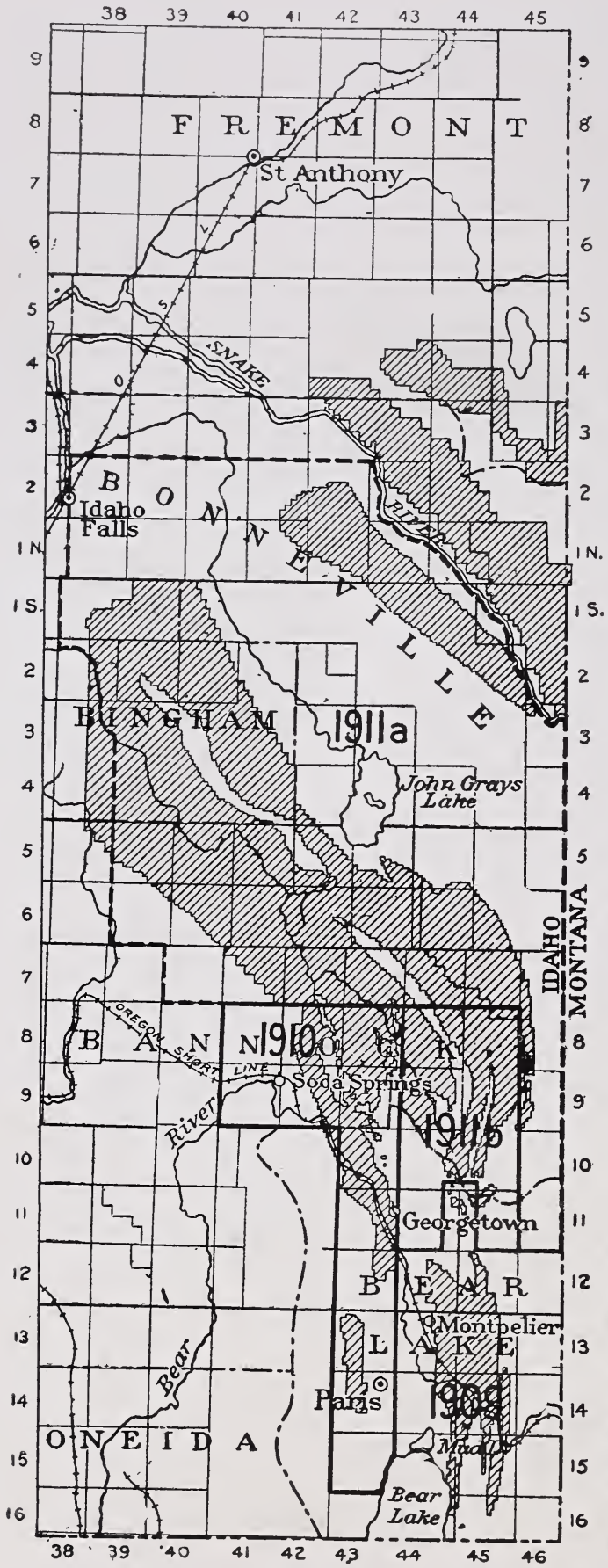
In the non-irrigated districts where the rainfall is greater or where the rainfall ranges from twenty to thirty inches there is a heavier brush and sod growth than is found in the irrigated ristricts, and, therefore, it is a little more expensive to cultivate new lands in the non-irrigated districts than where irrigation is practiced. However, the cost of leveling the land for irrigation will probably equal the added expense found upon other soils where the brush and sod growth is greater. In most of the dry-farm distincts and irrigated districts, four or six horses hitched to a railroad iron twelve feet long will pull out the brush by going over it a second or third time. "Grubbers" are sold which have a blade that runs just beneath the surface of the soil and cuts off all roots so that a rig will readily bunch the brush for burning. These grubbers are extensively used. One man with four horses will grub from four to eight acres per day, depending upon the character of the soil and growth of the brush.

CLEARING STUMP LAND.

In the "cut-over" districts where the sawmills have removed the timber the clearing process is more expensive. After the stumps have decayed a few years most of them are pulled without much difficulty. There are about 300,000 acres of excellent farm land in the "cut-over" districts of northern Idaho. Various methods have been practiced in the removal of stumps and in the development of this type of land. A large portion of the land may be cleared at a cost of from $20 to $30 per acre. It is not necessary to level the cut-over land for flowing irrigation water, as crops are commonly grown without artificial irrigation.

SIXTY ACRES OF PROSPERITY.

S. L. Kennedy was a run-down, fagged-out, Washington county, Pennsylvania citizen who escaped further doctor bills and fully regained his former health after establishing his home in Idaho. The above photograph shows a view of a section of his oat field near Nampa which averaged 104 bushels of oats per acre. In addition to other stock he keeps a splendid herd of full blood Rambouillet sheep.



The settler will need a plow, harrow, disc, drill, self-binder, mower and hay rake of about the same type that would be needed for farming a like area in the middle west or eastern states. In addition he will need a Fresno, which is a large scraper, and a leveler or float, which he may make himself. He may also make a corrugator, which is a very simple tool for opening up the small furrows for irrigation water. Farm wagons and other vehicles need to be made a little heavier and better ironed than vehicles used in the middle west, chiefly on account of the dry weather. Farm teams are worth from $250 to $400. Milch cows from $50 to $70.

PHOSPHATE DEPOSITS.

Showing a section of map adapted from the United States Geological report upon the phosphate deposits of Idaho. The shaded portions indicate the deposits that have been located by the cruisers. There are evidently many minable deposits that have not yet been mapped out by the geologists.

It is important to remember that the same conditions that contributed to the formations that now exist in minable rock form, also contributed to the formation of large quantities of phosphates that became widely distributed throughout the intermountain districts, that have become incorporated into the soil and are gradually disintegrating and are ready to become available for crops when air and moisture, which, through the process of cultivating the soil, aids in releasing the elements, so that plants may utilize them.

It is known that certain types of bacteria are inert and lie dormant in soil that contains less than ten per cent of moisture; it is also known that air and moisture are necessary for the growth and development of bacteria that set free and render available various forms of soil fertility. Therefore, this vast natural reserve of fertility in the arid lands has remained dormant and not dissipated, awaiting the coming of the farmer who develops and utilizes these wonderfully rich and productive soils.

Crop Production

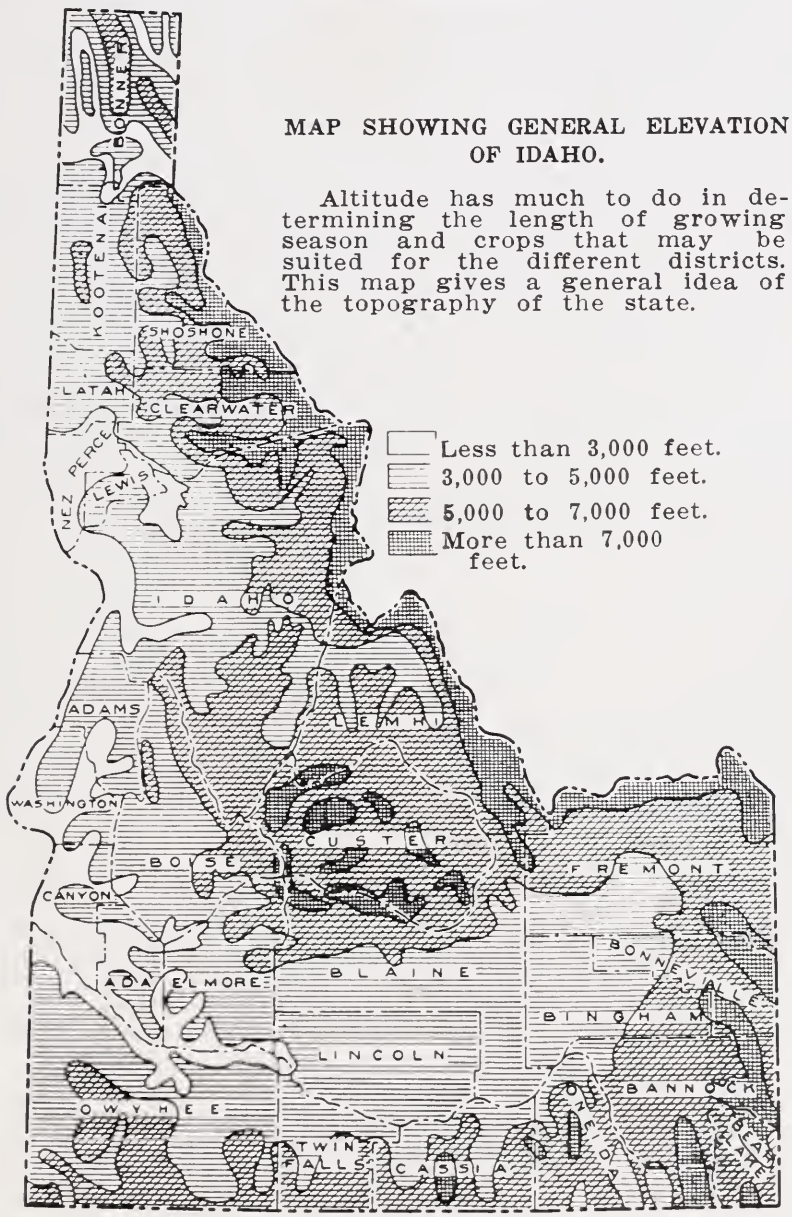
FARM TOOLS.

METHODS of producing crops in Idaho are not very different from the methods practiced in other states. With few exceptions farm tools and farm equipment that have been used in other states may be adapted to crop production in Idaho. Even the corn cultivator has become a part of the implement dealer's regular stock in some parts of the state.

In discussing agriculture, the broad interpretation is used. Properly speaking, agriculture covers all crop production, including live stock, horticulture and forestry—it does not include mining.

A LARGE STATE WITH MANY RESOURCES.

The area of the state of Idaho is very large. It is as large as the combined area of the states of Pennsylvania and Ohio. Idaho has a very wide range of soils, of altitude, of latitude, of precipitation, of climatic and other qualifying features.



MAP SHOWING GENERAL ELEVATION OF IDAHO.

Altitude has much to do in determining the length of growing season and crops that may be suited for the different districts. This map gives a general idea of the topography of the state.

This report is designed to furnish information to our own people with reference to the various industries and resources of the different parts of the state. There is need for our people to become better acquainted with our own neighbors. Therefore, not much space is devoted to commonplace detail, but rather to illustrate and discuss fundamentals that must be reckoned with in the future development of the United States. It is important to analyze and understand the part that the state of Idaho must have in the development and welfare of the country as a whole.

Incidentally this information should be of service to the homeseeker in search of a new location. It should serve as a guide to the investor who contemplates a district where there is safety and a character of resources that indicate a continued growth and expansion for years to come.

WHY IDAHO WILL ALWAYS BE A GREAT STATE.

Reference has been made elsewhere in this report to Idaho's natural soil fertility; the climate and scenic beauty; the natural timber resources; the mining industry, and the natural waters of the lakes and streams. These are a few of the state's resources that are *really fundamental* in estimating future growth and development. However, agriculture will always be the state's chief wealth contributing and home building factor. It is, therefore, thoroughly pertinent that underlying principles of crop production which lead to a *permanent* agriculture should be discussed.

There are ten elements of plant food essential to all crop production; all of them are necessary, viz.: Carbon, oxygen, nitrogen, hydrogen, potassium, phosphorus, magnesium, calcium, iron and sulphur. The four last named are mineral elements found in practically all soils in sufficient quantities to furnish the requirements for crop production indefinitely.

The four first-named elements are taken from the air and water and may be made available to supply the requirements of crop production indefinitely. Potassium and phosphorus are generally the limiting factors in crop production.

IRRIGATION FARMING MEANS INTENSIVE FARMING.

The above photograph shows a wide variety of truck crops that may be profitably grown upon a small area under irrigation. Celery is a crop that yields large cash returns. Winter onions, pickle onions, onion seed and onion bulbs are other profitable crops. There are large numbers of mining camps, logging camps and construction camps of various kinds that require large quantities of food stuff. Truck gardening in Idaho is one of the most profitable avocations.

RELATION TO CROP PRODUCTION.

In order to have an intelligent understanding of the relative importance of these various elements of plant food it is necessary to know something of their relation to crop production.

Potassium is the element of plant food that furnishes fiber to the plants and grains, and texture to the fruits. When potassium is lacking stamina is lacking; where potassium is lacking, fruits do not "stand up." The grower of small fruits on worn soils in many of the older states applies potassium in some form or another in order to grow berries that will carry to distant markets. Practically all of Idaho's soils are strongly impregnated with potassium. Idaho fruits have a fine, firm texture because the soils are naturally rich in this mineral element. There is a reason, therefore, for our superior fruits, vegetables, and many other crops.

THE VALUE OF PHOSPHATE.

Phosphorus is responsible for the production or lack of production of carbo-hydrates or starches, such as the well developed kernels of wheat, oats, barley and corn, also potatoes. The wheat crop begins to decline in yield in proportion to the decline in the available phosphoric acid in the soil. On most of the impoverished soils of the older states, increased yields of grains are had in ratio to the application of available phosphoric acid.

The further value of phosphorus and its relation to the welfare of mankind can be better appreciated when it is remembered how essential phosphorus is for the well-being of all animal life. At the Wisconsin and other state experiment stations where animals were fed on a ration devoid of phosphorus for a three months' period they utterly collapsed. In an intermediate state some of these animals were killed and it was found the flesh was taking the phosphate from the bone in order to supply its needs.

MATERIAL FOR BONE AND BRAIN BUILDING.

Phosphorus is, therefore, needed as a bone-forming material and in the development and repair of the brain cells. It applies to human beings the same as live stock. It is commonly known that horses raised on intermountain soil, feeding upon grains and grasses that are rich in these mineral elements develop bone, hoof and sinew very superior to similar animals fed and grown upon feeds not so rich in these constituents.

Formerly the potato was used chiefly as a basis for manufacturing starch. In Germany the potato continues to be the chief source of starch. Of late years in America, Indian corn or maize has almost entirely superseded the potato in the manufacture of starch. Starch forms the basis for the manufacture of glucose. Glucose is the most wholesome and most readily digested sweetening substance known. Glucose furnishes the sweetening property for the apples, grapes, and the berries. Phosphorus, therefore, enters into crop production in a very important way.

On the Rothamsted Experiment Station in England, experiments which have been continuously conducted upon a scientific basis for more than half a century show that the decline of phosphorus in the soil, more than any other one property, is responsible for the decline in yield and quality of grain.

IDAHO PHOSPHATES OF GREAT ECONOMIC VALUE.

Until the discovery of the rock phosphate deposits of the northwest the only commercial quantities that were known to exist in the United States were found in Florida and Tennessee. The Idaho State Mine Inspector calls attention to the fact that the phosphate deposits shown on the accompanying map amount to thirty times the phosphate deposits that were supposed to exist within the United States prior to the discovery of the deposits in the northwest. The deposits of Florida and Tennessee were largely acquired by foreigners who knew the value of this mineral element. The older soils of Europe have for years imperatively demanded the application of phosphate in some form; these demands have, for years, been costing agricultural Europe millions of dollars annually; therefore, foreign capital acquired large holdings in the earlier findings in America. It was at one time urged upon Congress that an embargo be placed upon the American deposits precluding their shipment to foreign countries, believing that all of the available deposits would be needed at a not very distant date upon the soils of the older states.

EXPERT OPINIONS.

Professor Van Hise, of the University of Wisconsin, an authority on geology, says: "The most fundamental of the resources of this nation is the soil which produces our food and clothing, and one of the most precious of the natural

resources of America having a value inestimably greater than might be supposed from the present market value, is our phosphate rock resource."

Robert N. Bell, State Mine Inspector, says: "The largest beds of high grade bone phosphate vary from five to nine feet thick, and usually occur near the base of the series and are overlaid by thinner beds of phosphate rock, fossiliferous limestone and shale bands, the whole series usually more or less phosphatic, and at some points containing 50 per cent calcium phosphate throughout the entire width. The richest beds are usually black in color, like dull coal croppings, and have an oolitic structure, common to soft limestones, which demonstrates their sedimentary origin.

"The primary source of such an enormous amount of phosphoric acid as these extensive beds represent has not been satisfactorily explained, but the myriads of organisms represented by the fossil casts of their shallow water enclosing formations would offer a plausible explanation as animal matter is one of the richest known secondary sources of this element, and the disintegration of these marine animal remains would afford a source of soluble phosphoric acid that was probably precipitated in connection with calcareous waters to form the present oolitic beds of phosphate rock."

DEPOSITS ARE WIDELY DISTRIBUTED.

Idaho is an intermountain state. The entire southern two-thirds portion of the state has but one drainage outlet—the great Snake river, except a small area in the extreme southeastern part of the state which is drained by the Bear river.

A large portion of this area is of sedimentary origin. The same factors that have contributed to the deposits of phosphates in minable quantities, as shown by the accompanying map, have also furnished large quantities of phosphates that have become disintegrated and entered into the soil formation over vast areas of intermountain soil. This, likely, accounts for the rich phosphate content of such large areas of the intermountain soil.

READY FOR THE THRESHING CREW.

The above photograph shows a section of the grain stack yard upon the state farm attached to the State Mental Hospital situated at Blackfoot. Most of the Idaho state institutions have a generous acreage of fertile land that is being farmed in a profitable way. In the irrigated districts it is common to use the self-binder in harvesting grain. The grain is then hauled from the field to the threshing machine or stacked to await the threshing crew.

MINING AND REDUCTION PROCESSES.

In addition to the value of these deposits in their relation to Idaho crop production, it will be of interest to the outside world to know that it has been found entirely feasible to mine the rock phosphate and process it for commercial fertilizer requirements. Rock phosphate becomes available plant food only in the form of phosphoric acid. Large smelters where sulphide ores are reduced have a by-product now escaping through their smoke-stacks in the form of sulphuric and sulphurous acid fumes which may be readily converted into sulphuric acid. From one smelter alone it is estimated that the escaping fumes are capable of yielding 3,800 tons daily of sulphuric acid worth from $5.00 to $7.00 per ton. In the past these fumes have been wasted; they have really been a menace.

After grinding the rock phosphate the floats may be readily converted into high grade "super" phosphate showing as high as 47% available phosphoric acid. Analyses show a large part of the natural deposits to run from 70% to 76% tricalcum phosphate. It will be seen that these rich natural phosphate deposits lie contiguous to the great copper smelters where sulphuric acid may be obtained as a by-product at a low rate which offers an extremely inviting field for the manufacturer who may supply the marvelous increasing demand from the older agricultural states for this imperative element of soil fertility.

Finely ground rock phosphate without treatment when spread upon the fields and incorporated into the soils gradually becomes available. When clover, alfalfa and other soiling crops are plowed under, the acids generated through the oxidization of the vegetable matter which produces the product called humus, hastens the decomposition of the raw rock phosphate.

THE VALUE OF CLEAN, HEALTHY FOLIAGE.

Carbon and oxygen are two elements which come from the air and are taken into the plant through minute openings that serve as breathing pores. These two elements enter the plant as a gas called carbon dioxide. The plant absorbs this gas, through openings or pores in the leaves. These openings are very minute; they are usually found on the under side of the leaves. Some plants have more than a hundred thousand such breathing pores to the square inch of leaf surface.

Hydrogen is one of the elements of which water is composed. Water is taken into the plant in the form of film moisture, by tiny rootlets, and is carried to the stems and leaves. The chlorophyl of the foliage appears to serve as a chemical laboratory where the action of sunshine transforms these three elements—carbon, oxygen and hydrogen—into important compounds such as starch, fiber and sugar. It is easy to understand, then, how Idaho sunshine and climate become great natural assets.

No matter how rich a soil may be, *no plant food can be utilized in growth or development in any form until it has been processed in this foliage laboratory.* It is imperative, then, that this laboratory be kept in the very best working order if the highest efficiency is had. That means bright, clean, healthy foliage.

The greatest menace to healthy foliage is fungi pests. Fungi thrive where a combination of two air conditions prevail. There must be heat and there must be moisture. When there is great humidity it is commonly called "muggy" weather. Under those conditions fungi spores multiply by the million and rapidly spread.

A VALUABLE DISCOVERY.

Because of the fungi trouble the vineyards of France are menaced to such an extent that the wine industry is impaired at intervals when severe humidity develops. Had it not been for the timely discovery of what is known as the Bordeaux solution, the vineyards of France would likely have been abandoned. The discovery was an accident. The owner of a vineyard near Bordeaux, France, had been greatly annoyed by schoolboys stealing his fruit. He conceived the idea of covering the foliage and vines with a spray that made an unsightly and repellant color. A solution of lime, copper sulphate and water gave the vines a dirty, repellant appearance.

The boys concluded that the vines had been poisoned and, therefore, let the fruit alone. The Frenchman made a discovery greater than he at first knew. The discovery has been worth millions to the world. He found that the plants that he had thus treated developed bright, clean, healthy foliage unharmed by the fungi ravages. The fruit from these vines was naturally sweeter than the fruit from the untreated portion of the vineyard. The sugar laboratory of the leaves was in good working order. The discovery has since been known as the "Bordeaux Solution."

IDAHO SUPERIOR TO FRANCE OR ITALY.

The United States imports $2,000,000 worth of grapes from France and Italy annually and a greater quantity of wines. There are districts in Idaho that have

THE PEA CROP IN IDAHO.

The growing of peas for seed purposes has become a very profitable agricultural industry.

Five years ago small trial fields were devoted to peas in several parts of the state. These trial experiments indicated that the crop could be produced in a profitable way. The plant is entirely free from disease and pests that were common in many of the older growing districts. In the upper Snake river district the acreage rapidly increased until the year 1912 when approximately 16,000 acres were grown. The growers in the St. Anthony district alone received something more than $600,000 for their 1912 crop.

all the requirements for successful grape growing upon a commercial scale that the best districts of France and Italy have, and the Idaho grower does not have humidity. The Bordeaux mixture is not needed here to keep the grape foliage laboratory in good working order. Plant foods are regularly processed to furnish the maximum amount of sugar as well as size to the fruit. Robert Sleicher, a Frenchman, has discovered a district in Nez Perce county, Idaho, that surpasses his native vineyard districts in France. For years he has been growing upon a commercial scale many of the choicest varieties from southern Europe. These include the White Tokay, Flame Tokay, Muscatel and Malaga. He succeeded in capturing the sweepstakes award upon his Idaho grown grapes and wine at the Paris International Exposition. His vineyards had more days of bright sunshine than the growers in France had; he had more essential soil fertility than his French competitors and, what was equally important, he had climatic conditions which gave him a laboratory in good working order, in the form of clean, healthy foliage, that elaborated all plant food and thereby gave him a superior grape and a vintage of unexcelled merit.

SKILLED GRAPE GROWERS NEEDED.

There are many equally as favored districts throughout Idaho where the more valuable varieties of grapes may be grown commercially. This state needs more skilled grape growers. What has been said with reference to keeping the foliage of the vineyard in clean, thrifty condition applies equally to all the other crops. The most luscious berries are never found on the plants or canes that have been attacked by rust. Rust is a fungi. A tree or plant that has all of its foliage constantly removed will die. Tissue building food cannot be processed except through the foliage. It therefore follows that anything that distresses the foliage of the tree or plant, even temporarily, arrests the growth and development of the tree or plant and its fruit, grain or other product.

The upper photograph shows a 160-acre field of peas that are being grown under contract for an eastern seed house. This field gave an average yield of 36 bushels per acre which brought the grower $1.80 per bushel or a total of $64.80 per acre. The crop requires about the same amount of labor to grow, harvest and market as does the oat crop. About the only special tools that are needed that are not commonly found upon the average farm is a winnowing attachment to the mower.

The lower view shows the method of harvesting which does not differ very much from the methods of harvesting and curing a hay crop. The peas, after being bunched from the windrow, are usually hauled directly to the threshing machine, but sometimes stacked as hay is stacked, and threshed later in the season.

The acreage has become so extensive in some districts that special threshing machines have been brought in. Prior to that time an adjustment of the concaves and clyinder allowed the ordinary threshing machine to do the work.

The central picture shows the comparative length of the vines and manner of setting the pod, which compares with the crop that is grown in gardens.

Peas thrive best in a moist, cool soil. Generally the crop does best where there is a sufficient amount of sand in the soil to allow a well regulated moisture supply. The crop covers the ground early in the season and thus protects the soil against moisture evaporation. The pea crop is a leguminous crop and therefore has the power to convert the free nitrogen of the air into available plant food through the medium of bacteria. The shaded, cool, moist soil furnishes ideal conditions for the development of bacteria. The pea crop is even more valuable than clover or alfalfa, as a leguminous crop, because it fits into an annual rotation.

The industry has grown to such proportions and has become so thoroughly established that the large eastern seed houses have established branch warehouses in Idaho to care for the crop. In addition to the district above referred to several other of the irrigated districts in Idaho have grown the crop very profitably.

At Blackfoot George Parrish obtained $120 from one acre of seed peas. B. F. Spitler, of Burley, produced 4,000 pounds per acre, on virgin sage brush land, that brought him three cents per pound or $120 per acre. Cheek & Christ, near Kimberly, raised 40 acres which averaged 38 bushels per acre and brought them $68.40 per acre. L. A. Snyder, of Twin Falls, had 49 bushels to the acre which brought him $88.70 per acre. It is estimated by those who are operating the warehouses that at least 40,000 acres of seed peas will be grown in Idaho during the year 1913.

These seed peas are recleaned at the local warehouses and the bulk of them shipped to eastern seed houses where they are put up in small packages to supply the retail trade throughout the country.

The juices of the sugar beet must be processed by the action of the sun upon the foliage that the impurities may be eliminated and the beet so developed that the sugar may be recovered from the juices in the process of manufacture at the factory. It has been found that beets grown in the humid country which have been harvested during a protracted cloudy period have less saccharine content and it is more difficult to recover the sugar that is contained in the juices because of the presence of abnormal quantities of negative impurities. Idaho grown sugar beets have high sugar content and the impurities, generally, are low, therefore, the per cent of extraction is good. Carbon, oxygen and hydrogen are filtered through bright, healthy foliage of the beet.

Chemical analyses show that sugar is composed of carbon, oxygen, and hydrogen—just wind and water, if you please—but of course the physical requirements of the root and plant call for additional elements of fertility but when sugar only is sold off the farms and the tops and beet pulp is used upon the farm, the crop is not a robber that impoverishes the soil.

Idaho has 225,000 acres of land admirably suited for growing sugar beets profitably. If the acreage was enlarged to these figures, the crop would bring an additional $10,000,000 annually to the state.

A REASON FOR SUPERIOR POTATOES.

The potato crop is quickly affected by anything that distresses the vines or tops. About 80 per cent of the solids of the potato is starch; the free action of carbon, oxygen and hydrogen are imperative for the development of the highest quality of starch cell.

It is not claimed that Idaho is entirely free from fungi trouble. Smut that injures or destroys the wheat heads or oat heads bothers here, if the seed becomes infected and is not treated before sowing to destroy the fungi. The minute spores become lodged in the kernels of grain in the early stages of development and are carried over until the following season. As the growing plant unfolds and develops, the fungi spores develop and expand within the stalk and blades. The growing plant furnishes the fungi the required moisture. This type of fungi may be entirely eradicated by treating the seed grain with the formalin or copper sulphate treatment at seeding time.

Potato scab is also a fungi pest. The spores develop in the soil where moisture is present but potato scab may be entirely eradicated by dipping the seed in a formalin solution, one pound (40 per cent solution) to 30 gallons of water. Rotation of crops will eliminate the spores in the soil.

THE DRY ATMOSPHERE ANTAGONIZES FUNGI.

It is not common to find fungi pests developing in the open, on plants or foliage because the air is too dry for fungi to thrive. There is very little bother in Idaho grain fields from rust.

In a dry climate, people perspire in hot weather but do not swelter and wipe off the perspiration as in the humid districts. The dry air evaporates perspiration. Heat prostrations are almost unknown.

Nitrogen is the element that is evidenced by vigorous growth, and also as shown by dark green foliage. Wheat, oats, barley, potatoes, corn or other crops that follow any of the leguminous crops always show a vigorous growth and dark green foliage. These same leguminous crops also supply the soil with humus, the product of decomposed vegetable matter. Clover, alfalfa, peas, beans, the vetches and a few other plants have the power of converting the free nitrogen of the air into available plant food through the action of bacteria. This nitrogen becomes available through the development of a tubercle growth upon the roots. Many soils in the older states will not successfully grow alfalfa, clover, and other legume crops without first innoculating the soil with introduced bacteria. Idaho alfalfa growers have never found it necessary or expedient to innoculate either new or old soil for the growing of any crop.

ESSENTIAL BACTERIA IN ALL OF OUR SOILS.

Every county in Idaho will successfully grow practically all of the legumes. The high altitude districts will not always mature seed, however. Even in the limited rainfall districts peas and beans are entering into a crop rotation that supplies nitrogen and organic humus. In many parts of northern Idaho and north central Idaho, the clovers are indigenous and promptly claim the neglected spots. The action of bacteria and the acids in the soil, in the process of supplying the nitrogen element, thus increases the supply of other elements of fertility for the succeeding crop.

The Beet Sugar Industry

THE beet sugar industry is one of the most important industries in Idaho. The accompanying table shows the acreage devoted to growing sugar beets, total tonnage grown, and the total production of sugar:

Factory	Acres	Beets Tons	Sugar Pounds
YEAR 1911—			
Idaho Falls	6,064	66,704	18,732,800
Sugar City	7,380	94,139	23,394,400
Blackfoot	4,139	45,378	11,333,500
Total	17,583	206,221	53,460,700
YEAR 1912—			
Idaho Falls	5,244	50,000	14,250,000
Sugar City (1)	7,159	70,000	19,000,000
Blackfoot	4,971	41,000	10,856,500
Burley (2)	3,000	25,500	4,500,000
Total	20,374	186,500	48,606,500

(1) This includes the acreage produced for the Parker auxiliary slicing station.
(2) New factory, just opened in 1912.

SUGAR BEET STORAGE BINS, BLACKFOOT FACTORY.

The growers receive $5.00 net per ton, delivered at the factory or nearest railway loading station. This means that the farmers received $1,031,105 for their 1911 crop of beets and $932,500 for the 1912 crop.

The 1911 crop averaged the grower $58.90 per acre. The 1912 crop averaged $45.75 per acre. The 1912 tonnage was much lighter than usual, owing to the cool weather in the early part of the season which caused delayed start and a lighter growth than common. It costs about $30.00 per acre to produce the crop, charging

the entire cost of production, including delivery to the factory or railway shipping station. Many growers receive returns double that shown by the average for the state; however, even the average crop is a profitable crop.

The four factories and one slicing station employed 653 people in the manufacture of 48,606,500 pounds of sugar in 1912.

The sugar beet crop yields returns other than shown by the price received for the beets. The tops have a value for stock feed amounting to from $1.00 to $3.00 per acre, depending upon the manner in which they are handled. The beet pulp is sold to the farmers and stockmen at from 25c to 35c per ton at the factory. This pulp, together with alfalfa hay, makes an excellent fattening ration and is extensively used in fattening sheep and cattle. Larger yields of oats, barley and most other crops are had following a crop of beets.

Large numbers of men, women, boys and girls find profitable employment in the beet fields during the months of June and July, a time when employment is needed for the older school pupils.

BEET SUGAR FACTORY, SUGAR CITY.

Again, at harvest season in the autumn, the beet fields give employment to many. The payrolls from the beet fields distribute large sums of money that go into circulation in the early winter at a time when it is most needed.

Sugar beets are a cash crop. The farmer knows what he is going to receive for his crop even before the seed is sown. It is not difficult to secure a cash advance upon the crop if it is needed to meet the labor payrolls.

Not all districts of Idaho are well suited for growing sugar beets. The moderately high altitudes where bright sunshine prevails during the day, and cool nights are common, are districts where the beets thrive the best. A rich soil and proper cultivation are necessary to grow a profitable tonnage. Bright sunshine is necessary that the foliage may properly assimilate the saccharine in the juices and assist in eliminating the soluble salts which commonly interfere with recovering the sugar from the juices while being processed in the factory.

It has been carefully estimated that Idaho has 1,200,000 acres of land that is well suited for growing beets in a commercial way.

The world's production of beet and cane sugar is about equal. It was formerly thought that beet sugar was not as sweet or not as valuable as cane sugar. It is now commonly known that the cane and beet sugars are identical, chemically speaking. In the earlier history of the manufacture of beet sugar in the United States, occasionally an inferior lot of sugar was turned out. This was due, however, to the manufacturing process rather than to the saccharine content of the beet. Good and bad sugar may be made from the juice of the sugar beet, just as good and bad butter may be made from the same batch of cream; the difference being entirely in the method of handling the cream and the individual who made the butter. The beet sugar factories operate generally about one-third of the year, and therefore the sugar boilers do not have continuous experience in the recovery of sugar in the juice and in the refining process. Important progress has been made in the operation of beet sugar factories and many of the earlier disappointments have entirely disappeared, including much of the prejudice that formerly prevailed against beet sugar.

Potatoes

Showing a sample of the type of potatoes that won the Grand Champion Sweepstakes Trophy.

The natural habitat of the potato is in a deep, friable, fine-grained soil that is easily put into good tilth. The physical condition of the soil is more important than natural fertility. A soil that has but little natural fertility, may be made valuable for the potato crop by adding artificial fertilizer. There are some types of soil that lack the physical characteristics that are necessary, and may never become potato soil. The potato is a tuber crop and needs aeration. Where natural fertility already exists, and the physical character of the soil is right, so much the better.

No matter how fertile the soil, unless the character of the soil is right the choicest quality of the potato cannot be grown. The climate has much to do in producing a uniform development of all parts of the potato plant. There must be a constant supply of air, moisture and fertility. There are large areas in Idaho where the altitude and climate are right and the soil conditions are ideal. It is a deep lava ash loam with sufficient sand to make it friable and easily worked. It does not readily crust; it absorbs excessive moisture and leads it down to a receptive subsoil. Capillarity is promptly established. When the plant needs moisture it is promptly fed to the surface and becomes available to the growing crop. Frequent cultivation is necessary. A fine-

LABOR-SAVING EQUIPMENT.

The potato digger is drawn by four horses. The digger elevates the potatoes and spreads them ready to be picked up and carried to the grader, which is drawn through the field with the picking gang. The grader mechanically sorts the potatoes into three different grades.

grained mulch is easily maintained, thus checking the loss of moisture through evaporation. A deep loam soil with a sand mixture is easily worked and easily kept in good tilth throughout the growing season.

Potatoes grow more uniform and more shapely in a mellow, friable soil. They must be kept growing constantly instead of allowing the growth to be checked through lack of cultivation or moisture and then started again. Drouth and neglect cause the first set of tubers to cease growing before they have developed size. Renewed growth is liable to start new tubers that never get much size and seldom properly mature. The shape and uniformity of the crop are important features that determine the value. Small and irregular sizes rarely have uniform development of the starch cells. Abnormal growth and irregular shape mean waste and lack of uniformity in baking and boiling. Potatoes that are not uniform in size and ripeness do not bake or boil well together. Some are over-done and some are under-done. Neither do mixed varieties bake and boil well together.

The best potato growing districts have not only the right physical soil, but a soil that has liberal natural deposits of plant food. Potash, phosphoric acid and nitrogen are three elements of plant food heavily drawn upon by the potato crop. Careful analyses that have been made show that typical Idaho potato soils have sufficient natural deposits. There is enough potash in the surface foot of soil to produce 140 crops of potatoes yielding at the rate of 300 bushels per acre. There is sufficient phosphoric acid to last 140 years, and nitrogen enough to last 30 years. Nitrogen is therefore the limiting factor in production. Nitrogen and organic humus are easily and cheaply supplied. Alfalfa, clover, vetch, peas and beans are leguminous crops that supply the soil with both nitrogen and humus. All of these crops are grown in Idaho commercially. There are almost no fungus diseases to bother the potato in Idaho. This is due chiefly to the lack of humidity. Fungi must have a moisture laden warm atmosphere to thrive. The atmosphere in Idaho is dry. The scab fungi which attacks the tuber and therefore grows in the soil where moisture is present, is easily eradicated. Seed stocks are dipped in a formaldehyde solution (1 pound to 30 gallons of water) which absolutely destroys the scab fungi. There are no serious insect pests. This appears to be due to the fact that the nights are cool and insects do not readily pupate.

With soil that is right, a regulated moisture supply through irrigation, and

MILESTONES ON THE ROAD TO PROSPERITY.

Showing part of an Idaho potato field that yielded 628 bushels per acre. It will be observed that only one-half of the rows of potatoes have been picked up, graded and sacked. The other one-half are yet seen lying upon the ground.

Notice how regularly they are distributed, and how uniform is the size. Commercial fertilizer is unknown in Idaho. It is not used in growing the potato or any other crop within the state. The potato crop fits into a regular rotation and thrives best following alfalfa, clover or peas.

an ideal climate, it is easy to understand why Idaho has become famous as a potato producing state.

The chief difference between good potatoes and bad potatoes is largely a matter of development of the starch cells. Certainly some varieties have better natural quality than others. But the best variety will produce inferior potatoes when badly grown.

About 80% of the solids of the potato that is well ripened is starch. When the starch cells are properly grown, ripened and cooked, there is no food more easily digested and more nourishing. Raw starch or undeveloped starch cells are always hard to digest.

The food problem has become a great economic problem. The potato will always be one of the world's important food products. An acre of potatoes will furnish a larger amount of sustenance and human food than can be produced upon an acre of ground devoted to any other crop. The potato is used regularly in the most humble cottage, and upon the most extravagant menu. It is a food product without

THE HANSON RESIDENCE AND A SIXTY-ACRE POTATO FIELD.

Lars Hanson is a Bonneville county farmer who raises from 40 to 60 acres of potatoes as a part of his regular crop rotation. His quarter-section farm was acquired by original homestead entry 15 years ago. He has accumulated a comfortable fortune farming this land that was acquired from the government free, and in addition it has furnished a comfortable living for himself and his familly. This original "free farm" is now worth at least $24,000. A neighbor has recently leased an eight hundred acre farm for a cash rental amounting to $6,000 per year, the land to be devoted to raising seed peas.

Mr. Hanson has storage cellars and warehouses that enable him to store, if necessary, and hold his crops until the market conditions are right. Sometimes the market is low and sometimes high, but like the cattle feeder who feeds regularly, he finds the average for a series of years to be profitable.

His home is modern and comfortable. The lawn is beautifully kept and the surroundings are inviting in every respect.

season. Should a shortage occur for a single day in the year, the demand would echo from the world's most distant markets.

There are several districts in Idaho where train loads of potatoes are sent out from single stations every day for several weeks in the fall and early winter—not merely in car-loads, but in train-loads.

In 1912 there were 46,193 acres of potatoes grown in Idaho, which yielded a total of 7,986,065 bushels. The average yield per acre was 172.8 bushels. According to government statistics, the state of Idaho in 1911 tied with the state of Maine for honors for first place in yield per acre at 180 bushels per acre, about double the average yield per acre for the United States.

In 1911 the United States experienced something closely akin to a potato famine. Idaho responded and shipped all her surplus crop to thirty-two states in the Union. Many markets used the Idaho potato for the first time. Our shipments set a new standard of quality for those markets. In addition to the vast supply that left the west for markets as far distant as the Atlantic coast, it was found necessary to import millions of bushels from abroad.

Experiment Stations

THE division of Agriculture of the University of Idaho maintains four experiment stations in addition to the central station located at Moscow. These stations are located at Gooding, Caldwell, Aberdeen and Clagstone. The station at Clagstone in southern Bonner county deals with the problems common to the northwestern part of the state, where the rainfall is sufficient, commonly, for producing practically all crops without artificial irrigation.

The station located at Aberdeen, near the corners of Bingham, Bannock, Oneida and Blaine counties, is given over largely to dry farming investigational problems. In many respects the territory in that district is regarded as unusually valuable in producing wheat, potatoes, barley and several other crops without irrigation. Large quantities of potatoes are grown in that region without irrigation for seed purposes. The stations located near Caldwell and Gooding have to do mainly with irrigation problems and variety tests.

VIEWS MADE AT THE GOODING EXPERIMENT STATION.

The view shown at the top of the accompanying illustration was made in the barley test plots upon the Gooding station. Sixty-two varieties are included in the series of tests. Barley has become an important carbo-hydrate substitute for corn for fattening and finishing stock.

The lower photograph shows Governor Hawley, Dean Carlyle of the University, Superintendent Welch of the Gooding station and Don Bark, irrigation engineer with the United States Department of Agriculture studying the records as recorded by the automatic register which makes continuous records every hour of the day and night, and indicates upon a record blank the flow of water that enters the experiment station field. An automatic eight-day clock is attached. The instrument records the flow, indicating the variation that may occur at any hour during the season. A float and counter weight is attached to the cylinder which automatically registers the flow upon a continuous record sheet. A similar device is arranged at the lower corner of the experiment station farm for measuring the waste water run-off of the farm. In this manner the exact amount of water used upon the station is determined. Each of the 240 different plots on the farm is so arranged that all water applied is measured.

The Gooding station soil is a lava ash loam typical of a large part of the irrigated land in south and southeast Idaho. On the Caldwell station, where similar experiments are run, the soil and altitude are typical of the large irrigated areas of southwest Idaho.

Last year it was shown by the results obtained that the yield of wheat increased with the application of water up to one and one-half acre feet and the yield gradually decreased from one and one-half acre feet to three acre feet.

There is a variation of course from one season to another with regard to the amount of irrigation water required, but the average for a series of years will safely determine the amount of water required, and then, too, the different types of soil vary in their requirements.

The State Land Board requires irrigation companies to provide a flow of not less than three acre-feet, allowing for seepage and evaporation above this amount. Water is cash or its equivalent and if it is concluded that a larger and better yield of wheat and other crops can be had with one-half of the allotted amount of water the discovery will be worth several millions of dollars to the farmers of the irrigated districts.

It is found that the forage yield of alfalfa increased even beyond the three-foot volume of water. Where diversified crops are grown less water may be used on wheat and small grain and if desired, more water on alfalfa and pastures. What is of even more importance is the evident conclusion that will be reached with reference to the *time* of applying water.

In the wheat experiments last year it was found that the plots that received but one irrigation gave a yield varying seven bushels per acre due to the time of putting water on. Water applied only once when the wheat was in the "jointing" stage, gave a yield of 34 bushels per acre, and a similar plot alongside of that received one irrigation only when the wheat was in the "heading" stage gave a yield of 41 bushels. The 7 bushels difference was due solely to the *time* of irrigation.

More than one thousand visitors were shown through the Gooding station on farmers' picnic day which occurred in July. Capable guides showed the visitors through the plots and explained the results. In most instances the visitor could easily see and comprehend methods and results. These stations are operated in a co-operative way with the United States Department of Agriculture.

Idaho is devoting a large amount of energy and careful thought and investigation to irrigation problems. The successful management of irrigation water will oftentimes record the difference between success and failure in producing a crop. It is a fortunate feature, however, that irrigation problems are really simple, and easily understood. Wide publicity is given to the progress of these investigations. The inexperienced newcomer can always find safe guidance.

MAKING GOOD ROADS BETTER.

Table showing number of miles of railroads in Idaho in years 1912, 1910 and 1904, increase in mileage, valuation, and increase in valuation.

Year	Miles	Increase	Valuation	Increase
1912	2,642.62	508.62	$84,506,573	$28,525,385
1910	2,134.89	682.24	56,981,188	31,742,744
1904	1,451.66		25,238,444	

Table showing the railroads operating in Idaho, the number of miles maintained by each railroad in the state, and the valuation as fixed by the state board of equalization in 1912.

Railroad	Mileage	Valuation	Counties
Oregon Short Line	1,227,64	$50,318,815	Ada, Canyon, Washington, Elmore, Twin Falls, Lincoln, Cassia, Blaine, Custer, Oneida, Bingham, Bonneville, Fremont.
Great Northern	105.45	5,510,305	Bonner.
Northern Pacific	329.37	13,369,198	Bonner, Clearwater, Idaho, Latah, Lewis, Nezperce, Kootenai, Shoshone.
Chicago, Milwaukee & Puget Sound	181.06	6,143,100	Latah, Kootenai, Shoshone.
Oregon-Washington Railroad & Navigation Company	142.87	4,318,295	Nezperce, Kootenai, Latah, Shoshone
Payette Valley Railroad	29.25	43,875	Canyon.
Pacific & Idaho Northern	90.00	495,000	Washington, Adams.
Spokane & International	122.29	1,528,625	Bonner, Kootenai.
Idaho-Washington Northern	32.96	263,680	Bonner, Kootenai.
Idaho Railroad, Light & Power Company (interurban)	68.62	576,015	Ada, Canyon.
Sandpoint & Interurban	6.00	6,000	Bonner.
Spokane & Inland Empire	29.95	445,985	Kootenai.
Idaho Northern	57.19	314,545	Owyhee, Canyon, Boise.
Caldwell Traction	7.50	7,500	Canyon.
Milner & North Side	21.45	53,625	Lincoln.
Washington, Idaho & Montana	45.14	361,120	Latah, Clearwater
Gilmore & Pittsburg	81.62	652,960	Lemhi.
Nezperce & Idaho Northern	13.85	13,850	Lewis.
Idaho Southern	22.98	57,450	Lincoln.
Coeur d'Alene & Pend d'Oreielle	20.61	103,050	Bonner.
Craig Mountain Lumber Company Railroad	6.00	6,000	Lewis.
Total	2,642.62	$84,506,573	Every County in Idaho.

The United States Reclamation Service Railroad, seventeen miles in length, between Barberton and Arrowrock, in Ada county, is not included in the foregoing table because the railroad is government property and is not subject to taxation. Including this railroad, the total number of miles of railroad in Idaho is 2,665.62.

Value of the railroads, telephone and telegraph lines in each county of Idaho as fixed by the state board of equalization in 1912.

County	Railroad	Telephone Lines	Telegraph Lines
Ada	$ 2,454,575	$ 152,965.00	$ 38,323.70
Adams	237,710	14,506.50	8,004.60
Bannock	7,957,370	99,014.00	135,010.30
Bear Lake	3,140,140	24,320.00	27,922.00
Bingham	2,246,350	55,435.00	80,989.80
Blaine	3,361,495	65,705.20	73,016.20
Boise	(1)	31,930.00	*
Bonner	10,929,645	53,302.90	92,054.00
Bonneville	1,208,895	36,893.50	20,665.20
Canyon	3,792,480	136,007.60	43,670.80
Cassia	871,775	17,689.50	9,123.40
Clearwater	741,530	8,676.00	*
Custer	93,590	10,200.00	7,353.50
Elmore	4,385,320	55,884.00	56,106.30
Fremont	6,156,995	89,284.00	131,243.60
Idaho	1,633,940	25,422.50	*
Kootenai	8,275,890	147,019.70	89,270.10
Latah	2,350,360	25,521.00	23,685.20
Lemhi	652,960	10,906.00	*
Lewis	635,450	14,543.00	*
Lincoln	7,898,195	48,599.10	102,003.00
Nezperce	2,457,710	56,356.40	28,317.20
Oneida	2,988,815	63,905.00	60,650.30
Owyhee	42,570	12,760.80	*
Shoshone	4,950,933	93391.00	56,895.90
Twin Falls	1,875,150	42,540.00	38,537.60
Washington	2,166,730	37,821.40	29,612.40
Total	$84,506,573	$1,430,599.10	$1,152,455.90

(1) The Idaho Northern Railroad, in Boise county, was not considered as subject to taxation by the state board of equalization in August, 1912, because at that time the railroad was in the course of construction. However, now the railroad has been completed for a considerable distance in Boise county and regular trains are being run. Today there is no county in Idaho in which there is not a railroad.

* In several of the counties where no valuation is placed on telegraph lines, the valuation was reported in conjunction with the telephone lines. In these counties the telegraph and telephone lines are closely affiliated.

A BIG CROP IN SIGHT.

The fruit crop contributes liberally toward freight business for the railroads. A well cared for apple, prune, peach or pear orchard, when in full bearing, will furnish about one car-load of first class fruit to the acre. That means a large originating tonnage for the railroads in the commercial orchard sections. The larger the volume of business, the better the service for the orchardists. Special inspectors and commercial agents are employed by the railroads to supervise the shipping service and aid the fruit grower in marketing and distributing the crop.

Statement showing number of carloads of various commodities forwarded from points on the Oregon short line railroad, in the state of Idaho, during the year 1911 and first ten months of 1912.

Station	Alfalfa Meal		Bran		Millstuffs		Beans	Peaches	Bees	Pears	Beets (Sugar)		Cheese		Apples		Fruit (Green)		Prunes (Dried)	
	1911	1912	1911	1912	1911	1912	1911 only	1912 only	1911 only	1912 only	1911	1912	1911	1912	1911	1912	1911	1912	1911	1912
Aberdeen																				
Alexander																				
American Falls				9																
Arco																				
Arimo																				
Ashton				1														1		
Bancroft																				
Bellevue																				
Blackfoot			6	3	13	1			1		633	187			16	6	1	1		
Bliss																	4			
Boise										5					1	46	230	198		5
Buhl							1													
Burley		1									70	30								
Caldwell		1		2											5	4		9	6	
Crystal																3	6	11		
Dayton											22									
Dietrich																	3			
Downey																				
Driggs																				
Dubois																				
Eden																				
Elva				6							22	16				1				
Filer	35	15									167	49				1				
Firth											24	4								
Fort Hall																				
Franklin					6						333	173			5					
Garner											23	4								
Glenns Ferry																				
Gooding																				
Hailey																				
Hammett																				
Hanson						1						17								
Heyburn			1		3	1														
Hollister																				
Idaho Falls			36	52	4						691	3			3					
Inkom																				
Island Park																				
Jerome																				
Ketchum																				
Kimama																				

Statement showing number of carloads of various commodities forwarded from points on the Oregon Short Line Railroad—(Continued).

Kimberly	67	72	3																	
King Hill																				
Lava																				
Lincoln												248								
Mackay				7																
Malad			3	3							166									
McCammon			1		1															
Meridian															148	61	141	127		
Milner											1									
Minidoka																				
Montpelier			2		3								13	7						
Moore											7	3								
Mountainhome			1					1												
Marysville											23									
Nampa								11			2				32	39			23	68
Notus																				
Oakley											1	13								
Orchard										4							7	2		4
Oxford																				
Paris																				
Parma																27	9	22		
Payette								2		4					295	310	118		11	150
Pegram																				
Picabo																				
Pingree												3								
Pocatello																				
Preston			11	4	10						129	29			6	2				
Rexburg			12	28							123	101								
Richfield																				
Rigby			15	6	1	4					137	25								
Roberts											19									
Rogerson																				
Rupert												3								
St. Anthony			49	62	23															
Shelley	50	21		10							287	87			4	3				
Shoshone			49												3	1	1	2		
Soda Springs																				
Spencer																				
Sugar City											654	307								
Tetonia																				
Thornton											283	124								
Twin Falls				56			12									9				
Weiser															20		22	106		
Wendell																				
Weston											71									
Totals	152	110	189	249	64	8	13	14	1	13	3888	1426	13	7	538	513	542	479	40	227

Statement showing number of carloads of various commodities **forwarded** from points on the Oregon Short Line Railroad—(Continued).

Station	Honey		Cattle		Hogs		Horses		Sheep		Lumber		Cabbage		Melons		Onions		Peas	
	1911	1912	1911	1912	1911	1912	1911	1912	1911	1912	1911	1912	1911	1912	1911	1912	1911	1912	1911	1912
Aberdeen						3					2									
Alexander					3	2			1	1	1									
American Falls			38	17	3	1	1	6	10	50	4	7								
Arco			68	40	4	7	5	1	38	28	1	2								
Arimo								1												
Ashton			1	15	4	12	3	1	4	5	112	33								3
Bancroft			47	22	1	2	7		93	146	2	1								
Bellevue			48	25					142	265		1								
Blackfoot	1	3	54	56	17	20	13	3	23	41	13	9								
Bliss	1	2	9	1		1	9	2	9	5	9	1					1			
Boise	1	2	11	5	3	5	39	48	166	142	23	23					1	3		
Buhl				2	8	19			19	45			4							
Burley			8	1			6	4	5	10	2	6								
Caldwell	1	1	33	60	1	7	33	30	30	24	16	9					1	1		
Crystal																21				
Dayton			1	2	2															
Dietrich									1		1									
Downey			5	8	2		1		28	9	1	3								
Driggs				16		1														
Dubois			47	45	1	5	4	6	10	56	4	2								
Eden									1											
Elva					4															
Filer			1	21	1	2			25	79		2								
Firth		1			1	10			1				6	13						
Fort Hall			2	4	5		2	2												
Franklin		1		3		1			21	18	1									
Garner						1														
Glenns Ferry			22	2			6	3		31		1								
Gooding			40		1		1	5	21	22	5	6			1					
Hailey			11	7					207	191										
Hammett											3				14	4				
Hansen			22	14	1	5			13	6										
Heyburn																				
Hollister							1					3								
Idaho Falls	4	3	64	143	95	171	17	8	291	239	7	19	1			1	5			5
Inkom																				
Island Park																				
Jerome				4		1				1		7								
Ketchum			19	7				85	498	502	4	5								
Kimama									2											

Statement showing number of carloads of various commodities forwarded from points on the Oregon Short Line Railroad—(Continued).

Kimberly					1	7					22	1								
King Hill																				
Lava																				
Lincoln																				
Mackay			79	65			1	4	99	99	1									
Malad			26	24	3	6	1	2	11	16	1	3								
McCammon			16	2		3	4	1	78	60	1	2								
Meridian		1				2	1		15	4	1	1								
Milner			17	1		2	3	3	91	19	1							2		
Minidoka			43	22			2		1	10		1								
Montpelier			89	48		1	13	19	218	148	4	4								
Moore			16	4	2	4	1		18	36										
Mountainhome			25	12			3	3	242	120										
Marysville									31		7		2							
Nampa	1	2	195	159	1	2	9	13	401	432	6	5						3		
Notus	1	1				2		3				1								
Oakley				8				1		123										
Orchard											1									
Oxford			38	34	1	15	1	1	39	11										
Paris				3						8										
Parma	1	1	51	15	11	19		2		29		3						1		
Payette	1	2	30	28	2	5	6	2	73	63	2	5		1	58	23				
Pegram			32	11					30	46										
Picabo			3	19	1	9		1	20	35		1								
Pingree																				
Pocatello			40	35			5	7	97	63	11	10	1							
Preston			9	5	17	24	1	8	5	10		3					2			
Rexburg	1	1	3	2	21	25	2	7	137	84	1	1								3
Richfield				4	1	2	1		40	8		21								
Rigby	1	4	19	14	49	44	1			43				1			1			14
Roberts			36	9	2	5		4	97	19										
Rogerson				7				1	104	60										
Rupert				3		1			3	17	17									
St. Anthony			34	53	2	10	1	1	102	70	9	4							9	96
Shelley				1	4	13		1	19	60			1							
Shoshone			22	11	6	3	14		70	31	7									
Soda Springs			61	119		1	2	3	782	873	1									
Spencer			19	32				1	173	204	25	29								
Sugar City			82	69					41	22			1		1		1			14
Tetonia										28										
Thornton							1				2						1			2
Twin Falls	1		30	10	1	3		5	18	15	57	24					1			63
Weiser	1	1	150	143	24	29	5	12	675	544		4			2		2			
Wendell					1					3										
Weston				1																
Totals	16	26	1719	1493	307	511	226	310	5389	5329	386	263	16	15	76	49	16	10	9	200

Statement showing number of carloads of various commodities forwarded from points on the Oregon Short Line railroad.—(Continued).

Station	Potatoes		Other Veg'tabl's		Wool		Barley		Oats		Wheat		Hay		Totals	
	1911	1912	1911	1912	1911	1912	1911	1912	1911	1912	1911	1912	1911	1912	1911	1912
Aberdeen	7	2							5	1	29	15	6		49	21
Alexander					1	1	6	1	25	10	197	52	14		248	67
American Falls	15	13		1	5	1	4		2	3	91	135	3	15	176	258
Arco	2	4			15	21	2	1		4	28	9		25	163	142
Arimo						27						57				85
Ashton	1				1		3	2	310	453	81	199	1	4	521	729
Bancroft	1				8	4	4	2	12	8	91	52	32	1	298	238
Bellevue		3			5		17	1	12	5	13	3	17	82	254	385
Blackfoot	496	284			2	1	5		37	35	32	35	121	164	1484	849
Bliss	19	4			14	15					1		2		78	31
Boise	40	8			22	17	6	1	17	6		3	13	17	576	534
Buhl	40	62			4	4	5		45	14	62	50	484	617	672	813
Burley	63	48			7	3	6	2	9	37	44	64	3	1	223	207
Caldwell	7	20			52	49	31	11	12	11	1	3	27	70	256	312
Crystal															6	35
Dayton							3	5	1		25	15			54	22
Dietrich	9								4		2	2			20	2
Downey					1	2	2	1	9		235	151		3	284	177
Driggs										2						19
Dubois	3	6			10	9			4	2					83	131
Eden	2								2		2				7	
Elva	42	34			9	9			2	16	47	50	121	18	247	150
Filer	58	106			3	3	1		63	57	103	80	489	557	779	922
Firth	139	102	4	5		4	1		15	19	41	24	311	281	686	509
Fort Hall									1				1	1	35	11
Franklin	1	9			2	1	2		9	1	58	47		5	438	259
Garner							3	10			43	53			69	68
Glenns Ferry													2	4	30	41
Gooding	108	57	1		3	3	7	1	3	5	1		1	9	193	108
Hailey					21	23	7		1	8	13	4		29	260	262
Hammett		1											1	1	18	6
Hanson	9	19							9	17	16	7	95	52	165	138
Heyburn	18	4									1	35	57	24	80	64
Hollister	3	1								1	23	8		17	27	30
Idaho Falls	1023	742	6	1	30	14	33	5	130	93	160	110	264	244	2864	1853
Inkom					2		1		1		5		7	6	16	6
Island Park						2							10	3	10	5
Jerome		38		2		1			4	6	2	1	2	53	8	114
Ketchum														1	521	600
Kimama													1		3	

Statement showing number of carloads of various commodities forwarded from points on the Oregon Short Line railroad.—(Continued).

Kimberly	20	48			1		1		22	28	41	9	276	328	432	492
King Hill		1		3											22	7
Lava		2							1		3	1	11		15	3
Lincoln		4										2				254
Mackay		4			8	6	1		5	5	5	2		18	199	210
Malad		1			3	12	15	15	13	6	288	165	1	3	531	256
McCammon	10				31		16	3	1		25	23	42	11	226	105
Meridian	2	1			1		1	1	8	22	46	23	92	118	456	361
Milner	20	63			9	3	6		2	2	6	6	14	97	170	198
Minidoka									19		2		49	8	116	61
Montpelier					23	18		1	42	17	31	41	309	198	840	501
Moore	9	15			70				36	20	5	7		154	162	243
Mountainhome						63					1		6	25	278	224
Marysville								1	75	41	19	13	2		159	55
Nampa	6	13			2	9	6	1	13	15	10	17	35	154	742	943
Notus											1	2		1	2	10
Oakley						9	1				2	4			4	158
Orchard					1						1				10	10
Oxford					8	2	11	8			137	29		6	235	106
Paris									5	8	4	6	138	91	147	116
Parma	15	7	3			2				10	8	6	33	24	131	168
Payette	4	4			28	15	3				16		8	10	655	624
Pegram					6	9							26	18	137	84
Picabo		1			4	19	10		5	16	6	1	2	1	51	103
Pingree																3
Pocatello	3	2			3	6	1			1	36	14	4	19	201	157
Preston	3	10			1	1	3	10	14	5	86	57	3	1	300	169
Rexburg	3	9		1	11	15	6	17	86	59	361	113			773	466
Richfield		4			2	7	6	2	2	16	6	28		13	58	105
Rigby	218	102	1		3	3	2	3	65	35	82	44	310	202	935	544
Roberts	49	28					7		28	12	9	5	11	11	258	93
Rogerson					12	13						11			116	92
Rupert	38	80							2	5	6	11	533	412	602	532
St. Anthony	21	16	1		24	15	2		252	181	192	109	37	8	758	685
Shelley	277	185				2		2	27	31	49	35	149	103	867	556
Shoshone	3	17			23	15	7		4	2			6	4	215	85
Soda Springs					97	67					5	2	2	7	950	1072
Spencer					18	19			1				159	157	395	442
Sugar City	4	3			3	3	14	3	88	49	135	52			1022	522
Tetonia										1						29
Thornton	3	15					1		58	47	80	56	1	2	430	246
Twin Falls	231	99			3	3	1		37	35	70	80	1082	873	1544	1274
Weiser	2	18	4	2	92	73	139	54	3	1	108	107	25	26	1274	1120
Wendell	10	5													11	8
Weston		6					2	3	2		85	120	1	1	161	131
Totals	3077	2330	30	15	797	623	411	197	1671	1484	3418	2525	5545	5430	28,438	23,826

Statement showing the number of carloads of various commodities forwarded from points on the Idaho Northern Railway during the year 1911 and first ten months of 1912.

Station	Sawdust		Flour		Green Fruits		Cattle		Hogs		Horses		Sheep		Lumber		Potatoes	
	1911	1912	1911	1912	1911	1912	1911	1912	1911	1912	1911	1912	1911	1912	1911	1912	1911	1912
Middleton	.....	.....	.....	.....	13	16	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1	2
Emmett	.....	1	.....	.....	2	34	.....	.....	.....	1	3	5	155	116	5	3	1	.....
Murphy	.....	.....	.....	.....	.....	.....	128	121	.....	.....	.....	2	229	281	.....	.....	.....	1
Montour *	.....	.....	.....	1	.....	.....	.....	.....	.....	4	.....	.....	.....	86	.....	6	.....	.....
Total	.....	1	.....	1	15	50	128	121	.....	5	3	7	384	483	5	9	2	3

Station	Wool		Hay		Grain		Gravel		Canned Goods		Ore		Wood		Nursery Stock		Totals	
	1911	1912	1911	1912	1911	1912	1911	1912	1911	1912	1911	1912	1911	1912	1911	1912	1911	1912
Middleton ..	.....	.....	1	.....	7	10	20	16	.....	.....	.....	.....	.....	.....	.....	.....	42	44
Emmett	4	10	.....	.....	4	.....	.....	.....	2	3	9	2	2	.....	3	1	190	176
Murphy	4	6	.....	.....	.....	1	.....	.....	.....	.....	5	4	.....	.....	.....	.....	366	416
Montour	.....	.....	.....	.....	.....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	98
Total	8	16	1	.....	11	12	20	16	2	3	14	6	2	.....	3	1	598	734

*—Montour is a new station on the extension of the Idaho Northern now building from Emmett to Payette Lakes. The showing for this station represents about two months' business.

The foregoing tables showing shipments of surplus products indicate the character of crop production and manufacturing pertinent to entire territory served by the two railroads which have furnished the information. An effort was made to procure like data from all railroads operating in Idaho, but methods of tabulating records differed with other railway systems, and it was not possible, therefore, to cover the shipments from all parts of the state. There are many new districts that are just beginning to produce a surplus that will make an entirely different showing within the next few years. There are also many fertile, surplus producing districts not immediately tributary to the railroads which draw their surplus to railway stations some miles distant. This denies their local community the shipping credit that they are entitled to. However, a fairly accurate idea may be gained from a study of these tables, as to the crops and manufacturing that commonly prevails in their respective districts.

Address State Immigration Bureau asking for late maps showing railway extensions now under construction in various points in Idaho. Map also shows proposed extensions.

Tobacco in Idaho

THE GROWTH and development of the tobacco growing and manufacturing industry in the United States furnishes an extremely interesting bit of history. In early colonial times the settlers discovered that the tobacco plant thrived remarkably well in the Jamestown district. The Virginia colonists soon found that it was about the only commodity they could produce that would exchange to advantage for the various manufactured necessities or luxuries which they desired from the "home country." An interesting bulletin from the Bureau of Plant Industry states that John Rolfe was growing tobacco in the streets of Jamestown as early as 1612, and in 1618 the first official statement of exports is recorded, which amounted that year to 20,000,000 pounds of tobacco at a valuation of $0.54¾ per pound.

The superior quality of American grown tobacco established a market in Great Britain for a given type of tobacco that still continues to be demanded from the United States in large quantities. Generation after generation of tobacco users have demanded the American grown product. The following table shows some of the principal tobacco producing areas of the United States, yield per acre and farm value per pound:

Section	Production Pounds	Yield per Acre Pounds	Farm Value per lb. Cents
New England	29,655,000	1,638	15.9
New York	7,050,000	1,175	8.0
Pennsylvania	30,732,000	985	9.0
Ohio, Miami Valley	49,500,000	900	9.5
Wisconsin	37,170,000	1,180	9.2
Florida and Georgia	4,665,000	707	34.0
Total	158,772,000		

The following table shows the exports of tobacco produced in the United States for a single year:

Kinds	Pounds	Value	Kinds	Number	Value
Leaf	323,033,034	$ 34,342,293	Cigarettes	1,539,364,000	$ 2,000,881
Stems & Trim'ngs	7,779,624	384,864	All other Tobacco		1,158,051
Plug	6,295,757	1,525,888			
Cigars	2,352,000	51,702	Total		$39,463,679

It will be observed that the total tobacco exports from the United States amounts to $39,463,679, as compared with the following table, which shows imports of tobacco which amounted to $26,510,523.31 during the same period:

Kinds	Pounds	Value	Duty	Value (duty added)
Wrapper Leaf	5,396,539	$ 6,073,444.52	$9,949,094.04	$16,022,538.56
Filler Leaf	27,183,222	16,166,369.02	8,513,519.16	24,679,888.18
All other Leaf	89,488	35,470.30	42,068.54	77,538.84
Stems	3,164,242	15,280.00		15,280.00
Cigars and Cheroots	704,875	4,011,177.80	3,342,527.13	7,353,704.93
Cigarettes	22,452	69,081.87	115,969.28	185,051.15
Other mfg'd. tobacco	358,841	139,699.80	196,911.59	336,611.39
Total		$26,510,523.31	$22,160,089.74	$48,670,613.05

The filler leaf comprises by far the greatest quantity imported. Idaho grows an excellent quality of filler leaf. The accompanying photograph shows a field of Burley tobacco growing in Idaho. Notice the delicate veining and beautiful, bright sheen upon the foliage. Investigations have been carried on testing the different qualities of Idaho grown tobacco. The test shows it to be one of the best "binder" types of tobacco. It is destined to have a large market also as a "filler." The leaf is fine grained and finds a ready market with the manufacturers of high grade cigars. Idaho soil is rich in mineral elements which appear to furnish the leaf with the qualities that commend it as a "filler" and a "binder." Sound economics suggests that the United States sorely needs to have a territory developed where a choice "filler" leaf tobacco can be grown and thus keep at home the $16,166,369.02 that is paid to foreign growers for this class of tobacco.

AN IDAHO TOBACCO FIELD.

Idaho climate with dry atmosphere and regulated soil moisture under irrigation furnishes a fine grained, tender foliage with a delicate chlorophyl that seems to be responsible for the development of a superior leaf.

We have no humidity to foster fungus growth. One of the expensive features in growing tobacco in most districts is constant care required in removing "suckers" and picking off the tobacco worm. The indications are that Idaho's high altitude and cool nights interferes with pupation of the tobacco worm and thus eliminates a considerable item of expense in producing the crop.

It is also important to have favorable weather in the drying and curing season in the autumn. There will be less need of expensive curing barns and firing oven to cure the leaf, as weather conditions here are far more favorable in the autumn than commonly found in the older tobacco growing districts. The crop yields from $90.00 to $200.00 per acre. It is important that we produce, at least, sufficient of the leaf to keep at home the thousands of dollars that are constantly being sent out of the country. Idaho possesses many fortunate conditions calculated to supply large quantities of superior leaf.

SOLVING THE BREAD PROBLEM.

"See America First"—Begin with Idaho.

Dry Farming

SOLVING THE BREAD PROBLEM

Two Great Power Combines Operating Upon the Dry-Farm Wheat Fields of Idaho.

The header and harvester, which is attached to a threshing machine on wheels is called a "combine" because the entire operation of harvesting the standing grain, threshing, recleaning and bagging, or delivering the grain into grain tanks on wheels, as shown in this instance, is all "combined" in one process. The engine furnishes the traction power and drives an auxiliary power plant which operates the harvester and threshing plant.

One of the combines shown is operated with a 40-horse power steam tractor and draws a combine with 25-foot sickle-bar. The other 50-horse power steam tractor draws a combine with 35-foot sickle-bar. The two outfits harvest, thresh, reclean and deliver into the 70,000-bushel elevator on the farm at the rate of 100 acres per day.

On the J .W. Webster farm herewith illustrated, in 1911 1,800 acres of Turkey Red wheat yielded 59,400 bushels, or an average of 33 bushels per acre. In 1912, 2,200 acres on the same farm produced 71,500 bushels, or an average of 32½ bushels per acre.

A crew of ten men and six wagon drivers and one elevator man is required for the operating force. The total operating cost amounts to a trifle less than $75.00 per day, which covers fuel, oil, water and incidentals. Seventy-five cents per acre is less than it costs for binder twine and bags, as managed by some wheat growers. In these better dry-farming regions of Idaho there are no dews, almost never a rain or shower or hard wind during the harvest period, and the loss through shattering is small. The weather and climatic conditions are such that the harvesting period may safely be prolonged for several weeks, which is a decided contrast to most wheat-growing districts. There is only a comparatively small area in Idaho where dry-farming is practiced where there is li: ble to be damage from frost. The soil generally is warm and growth begins earlier, and therefore maturity is earlier and safer than in many high altitudes or in shorter season latitudes. Frosted wheat is responsible for a sticky, gluten content. Idaho dry-grown wheat is not only rich in gluten content, but the gluten is smooth and of excellent quality. Flouring mills in many states are buying Idaho wheat grown under perfect weather and climatic conditions—upon soil rich in mineral elements of plant food. They require a superior gluten wheat for blending in order to manufacture a superior light bread flour.

SOLVING THE BREAD PROBLEM.

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Dry Farming

MORE than one-half of the land surface of the two continents receives less than 20 inches of precipitation per annum. Where the precipitation amounts to less than 20 inches annually, it becomes necessary to systematically conserve the moisture for the production of crops. Farming under these conditions is commonly termed "dry farming." The area of public lands that may be used for agricultural purposes that are yet available are located mainly in districts where either dry farming must be practiced or where irrigation waters are applied. Only a comparatively small part of the remaining public land can be irrigated; water for irrigation is limited; it therefore means that the areas that may be brought under cultivation where agricultural crops may be successfully produced must come from the districts where limited rainfall must be made to serve its highest duty.

The conditions that favor the development of these lands are elevations where the natural evaporation is comparatively small during the growing season and where there is a soil deep enough to serve as a storage reservoir for the moisture that is precipitated during the wet season. This soil must be a retentive soil so that the largest possible portion of moisture may be kept in reserve for the growing crop and supply its needs during the dry period of the growing season. The elevation must not be so high that there will be danger of late killing frosts in the spring or untimely killing frosts in the late summer or autumn.

Idaho has from ten million to twelve million acres of land that comply with the above requirements. As shown elsewhere, there are more than five million acres of these lands that are yet open to homestead entry. The state of Idaho owns several millions of acres; there are about three million acres that have been patented or will be patented within the next two years, and there are yet large tracts of

HARVESTING IN THE PAN-HANDLE COUNTRY.

Latah county is the largest wheat producing county in Idaho. The total yield for the county for the 1912 season aggregated 2,043,360 bushels. This is sufficient wheat, when made into flour, to furnish the entire population of the city of Chicago with biscuits for breakfast each morning for the period of one week, excepting Sunday.

The Palouse country is a vast wheat field that seems to furnish yields even larger than were had forty years ago. The above photograph shows a combine-harvester that was invented by two wheat growers, and is now manufactured in the center of this great wheat-producing region. This machine, which sells for about $1,000, is operated by one man, a boy, and six horses. It will harvest, thresh, reclean and bag from ten to fifteen acres a day of wheat that yields from 20 to 40 bushels per acre.

With improved machinery, which is now commonly used in the better agricultural districts of Idaho, it is possible to produce a 40-bushel-per-acre crop of wheat at a total cost of less than $5.00 per acre, including the delivery of grain to the railway station or warehouse.

JUST BOYS.

There is only one subject that is more interesting—girls. The boy is to be pitied that has never known the joy of having a pony that is really his own. A dog and a pony, of the right kind, are excellent companions for the boy. They lead to an outdoor gymnasium that develops physical welfare and a love for natural surroundings that also build for better citizenship. The boy that learns to mend a broken harness that gives way when he least expects it—learns to mend it so it will not need to be mended again, overcomes unexpected difficulties and learns that lesson well, has learned a great life lesson. The boy that learns to share his pleasures as well as his disappointments with other boys has already learned how to overcome a flagrant weakness in mankind generally—selfishness.

Learning to build campfires and provide for impromptu needs when he is out of range of older help develops self-reliance. Landing a gamy trout after hours of persistent angling develops patience and a keen appreciation of the victory that should follow all well applied effort. The trout that escapes at the last moment when victory seems so certain, exemplifies the trials and tribulations that must come to everyone, no matter who they are, or what their life work may be. The boy who early learns to capitalize his disappointments and convert threatened failure into success has already established a future working capital of great value.

There are many parents in the old established farming districts, in villages, in towns, and in the great cities, who are pondering upon the question of future employment, trade, or profession for the son. The avenues near home that offer openings are already crowded. It requires courage, however, for the grown-up boy to start for a new, and to him, an untried field; it also means a sacrifice for the parents to deny their guiding influence that is so much needed. Many parents have chosen the alternative and have sought the new field where the avenues of employment and opportunity are not crowded.

In the new west there is an invisible handwriting against the horizon of each awakening day that calls for men and women who are willing to share the pleasures and sorrows, the successes and the disappointments, the toil of the morning and the quiet rest of the evening, the labor of youth and the reward of honorable toil—there is a call for help where health, wealth and happiness are generously distributed.

There are many avenues in the new west that call for trained ability and also offer openings for the amateur who is ambitious to develop his skill. It may be surveying out a subdivision, or it may be an original government survey through dense forests or among forbidding crags; it may mean measuring the flow of a mountain stream, or sounding the test pits for a great power plant or a diversion dam. It may mean the installation of a mammoth pumping plant and gigantic motors and transformers; it may mean running railway surveys, calculating cuts and fills, tunneling mountains and bridging streams. The mining industry is more and more dependent upon skilled

withdrawn land that will be cruised out and will become available for entry, from time to time. It is believed that much of the lands that are now withdrawn pending further investigation relative to phosphate deposits will be thrown open to entry as fast as reports can be made upon the tracts, indicating that they do not contain sufficient phosphate rock to warrant commercial mining.

Idaho, therefore, is rapidly becoming the most important dry farming state in the Union. People who know soil and climatic conditions and the requirements for successful dry farming no longer question the feasibility of dry farming; in many districts of Idaho a large number of farmers are now making very satisfactory profits in their dry land operations; their crops are even more certain than crop production in much of the corn belt country because the precipitation that does occur comes regularly and practices that are successful one year may be counted upon as a safe criterion for other years.

The profits from dry farming are not always large when computed upon the acre basis, but when they are considered as interest upon the investment they compare favorably with the profits made on the higher priced lands. With the development of farm machinery, particularly the wonderful achievements that have been made in producing mechanical farm power which is being used for plowing, fitting, seeding and harvesting upon these dry lands, the cost of producing a crop is relatively small. It is true that dry farming methods usually mean extensive operations. The wheat crop is the principal crop produced upon this type of land. In the more favored districts, barley, oats, and sometimes alfalfa, peas and beans enter into a rotation, but generally speaking, the wheat crop is the main crop that is relied upon throughout the dry farming region. Most farmers in the dry farming districts of Idaho practice the "summer fallow" system. Winter wheat is sown late in the summer and becomes well established before winter comes on. In many communities a heavy fall of snow occurs before the ground freezes in the early winter. The protection of the snow furnishes favorable conditions for the activity of bacteria in the soil and the melting snow finds its way into the soil. Where spring grains are sown the soil is worked at the earliest opportunity and seeding started in sufficient time to allow the crop to become well rooted and shade the soil before the dry season comes on.

At harvest time the improved header and combines may be operated upon a very economical basis. As shown in an accompanying report, J. W. Webster of Rexburg was able to harvest, thresh and deliver his grain into the elevators at a total cost of 75 cents per acre. This was very much less than the average cost. W. L. Shattuck of Idaho Falls had an average season run on more than 3,000 acres at $1,52 per acre for his entire harvesting and threshing cost, using the modern combines. W. H. Philbrick of American Falls had an average of 18 bushels per acre from his 4,000 acre crop of Turkey Red wheat at a total cost for producing and harvesting the crop of $5.25 per acre, leaving him a net profit of $8.25 per acre. A neighbor, F. D. Enns, had 250 acres of dry farm wheat which gave him a yield of 19 bushels per acre, while Jesse Hayes, another neighbor, had 550 acres of Turkey Red wheat which gave an average yield of 25 bushels per acre. Frank Gribben of Weiser had 76 acres of dry-grown wheat which averaged 22 bushels per acre; his entire cost of producing the crop, harvesting and delivering to the elevator was $7.00 per acre which left him a clear profit of $9.65 per acre.

In what is known as the Pan Handle country of north and north central Idaho, which is one of the greatest wheat producing districts in the United States, very much larger yields are had. It is not uncommon to find an average ranging from 60 to 75 bushels per acre. These lands are not cheap lands, however. Developed lands bring from $75 to $100 per acre and raw lands from $25 to $50 per acre. This district is not, strictly speaking, a "dry farm" region, as the rainfall usually amounts to from 22 inches to 26 inches per annum.

In the Kendrick, Juliaetta and Troy districts of Latah and Nez Perce counties, the navy bean has entered into rotation with wheat. The bean crop is a leguminous crop and adds nitrogen to the soil. A larger yield of wheat can be had following the bean crop than where the land is summer fallowed, as was the former practice.

During 1912 nearly 5,000 acres were planted to beans in the Kendrick country alone. A larger acreage will be grown in 1913. The yield ranges from 700 to 800 pounds to the acre and the contract price is 3½ cents a pound. Some of the better yields have brought the grower as high as $75 per acre. Buyers representing eastern

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service. The great lumber mills are searching for skilled help which will convert dividends out of what was formerly waste by substituting economic science. Railway building means town building and country building. Towns must have stores and stocks of merchandise, banks, mechanics, the professions, and homes. The country must be stocked, equipped and developed. The public range is yet available for both large and small herds and flocks. The new order of farming calls for intelligent knowledge of soil requirements, of greater intelligence relative to all agricultural industry. The new order of farming calls for mechanical skill to handle modern farm equipment.

Yes, "just boys!" The new west needs them and we also feel that the boy needs the new west.

and coast jobbers have established a regular cash market that eagerly takes the entire output. The crop is also grown in commercial quantities in some of the irrigated districts.

Garden peas are grown for seed purposes also in some of the dry farming territory. The early maturing varieties succeed admirably and often are more profitable than the wheat crop.

In the Pan-Handle or Palouse country it costs from $5.00 to $6.00 per acre all told to produce and harvest a 40 to 50 bushels per acre crop of wheat. This includes the cost of summer fallowing. The soil is deep and very fertile and retains a large portion of the moisture when properly farmed. There are few classes of farming that yield a larger average net profit upon the investment than wheat farming in these favored districts.

Wheat farming in the better dry farming districts lends itself, as does no other class of farming, to "syndicate" or extensive operations. The largest net profits on most lines of farming are had upon comparatively small acreage. Machinery and mechanical power can be adapted to wheat farming more economically and in a more dependable way than to any other farm crop. The entire work of crop production on the dry farm wheat fields may be done with machinery. While horses will always be used in all farm work, traction power is rapidly coming into successful use in extensive wheat farming. As many as 20 bottoms are operated on a single power driven plowing outfit. Harrows and discs and drills and summer fallow operations are also power driven, but where the draft is less concentrated horses continue to be used.

The "combine" as now developed, is an almost perfect piece of farm equipment. Untimely rains seldom occur; dews are of little consequence; there is but little loss, therefore, from shattering, and the grains ripen sufficiently early to allow a long period of harvesting directly from the standing grain. The better dry farming districts of Idaho offer almost ideal conditions for extensive operations. One operator who grows several thousand acres of wheat annually ran his combine for a period of more than six weeks harvesting his 1912 crop. This splendid record is in decided contrast with less favored regions where the altitude and latitude demand that the wheat be cut and shocked within a few days' time to escape danger from early autumn frosts. This means that the grains must mature in the shock. The "hurry-up" season districts call for self-binders and large numbers of extra harvest hands at high wages to run the self-binders and shock the grain and complete the threshing before the winter weather comes on and, even at that, there is a considerable risk against freezing. It is important to select a location where there is sufficient time to allow the wheat to mature with the frost risk eliminated. The combine harvester offers the cheapest method of wheat production that is known. The combine will successfully operate only where climatic conditions are right.

The following is an interesting table showing the world's wheat production:

WORLD'S WHEAT CROP IN DETAIL.

Chief Importing Countries—	1911 Bushels	1910 Bushels
Great Britain	64,166,000	58,720,000
France	319,477,000	303,200,000
Germany	149,086,000	150,880,000
Austria	58,740,000	58,560,000
Italy	191,986,000	176,300,000
Holland	5,646,000	5,120,000
Switzerland	3,483,000	3,280,000
Belgium	14,300,000	12,880,000
Denmark	5,023,000	4,770,000
Scandinavia	7,956,000	6,950,000
Spain	148,170,000	139,500,000
Portugal	10,083,000	9,200,000
Greece	10,266,000	6,650,000
Egypt	45,100,000	45,870,000
Turkey	58,166,000	65,000,000
Chief Exporting Countries—		
United States	**617,670,000**	**612,500,000**
Russia, Siberia, Caucasia	508,680,000	768,800,000
Hungary, Grotia, Slavonia	187,860,000	180,766,000
Roumania	95,443,000	106,650,000
Bulgaria	61,600,000	58,725,000
Servia	14,670,000	12,900,000
East Indies	370,850,000	351,200,000
Australia	100,690,000	91,850,000
Argentinia	139,330,000	128,800,000
Chile	33,000,000	24,200,000
Canada	118,870,000	106,400,000
Algeria	35,790,000	44,000,000
Tunis and Tripoli	8,800,000	11,050,000
Uruguay	9,720,000	9,200,000
Mexico	9,170,000	10,500,000
Japan	34,940,000	20,950,000
British South Africa	10,080,000	3,700,000

It will be observed that the United States is the largest wheat producing country in the world. A study of the statistical crop production shows that the states which lie east of the Missouri and Mississippi rivers do not produce sufficient wheat to sustain the population contained within that area. It is also a matter of history that the best bread-producing flour is manufactured largely from the hard types of wheat. It is commonly known that the hardest wheat found in any district of the world is grown in the short-season districts. The cool nights and crisp atmosphere seem to be conducive to quick maturing hard wheat. These conditions prevail in Idaho where dry farming is practiced.

It will be observed by the accompanying table that Russia, including Siberia and Caucasia, is the second largest wheat producing country. The largest portion of the Russian wheat country is comparable with the dry farming conditions in the inter-mountain country. The Italian manufacturers of macaroni and vermicilli buy the best hard gluten wheat that they can find to satisfy the milling and manufacturing requirements of the macaroni and vermicilli trade. For many years their wheat has been brought chiefly from the Kharkov province of Russia. The Italian manufacturers have established a large market in the United States for their macaroni and vermicilli products. Their exports to this country amount to $500,000 per month. It has been clearly demonstrated that Idaho dry grown wheat makes a type of flour that produces a quality of macaroni and vermicilli the equal of the best imported goods. The dry farms of Idaho must save to the United States this item of $6,000,000 per annum.

It requires nearly 2,000,000 bushels of wheat per day to feed the people of the United States. This is equivalent to 100 train loads of 20 cars to the train and 1,000 bushels per car. It will require nearly 20,000,000 more bushels of wheat to feed the people of the United States next year than was required this year. It will require an additional 20,000,000 bushels the following year. This annual increase is a greater amount than Idaho now produces. The chief area yet available to meet the demands of the bread consuming public is in districts where dry farming methods must prevail.

It requires but 13 inches of moisture to produce a paying wheat crop. If our moisture could be conserved and used, 6½ inches of precipitation per annum, where wheat is grown alternate years, profitable crops of wheat could be grown; but, of course, even under the most modern methods, part of the moisture is lost through evaporation. Most of the dry farming area of Idaho receives from 12 to 14 inches of precipitation. The soil is deep, receptive and retentive when properly handled.

What, then, does the science of dry farming mean to Idaho people?

What does it mean to the individual who secures a wheat farm and develops it? What does it mean to the state of Idaho, the most extensive landlord in the United States? What does it mean to the landless man who is hungry for a slice of the earth's surface, that he may help to meet this great bread problem and delves into the rich man's pocket and tightens the hunger grasp upon the world's hungry millions? There is but one solution. Our people will develop these millions of now unproductive acres.

Those in a position to judge knowingly feel that Idaho will have no repetition of some of the older states with reference to failing fertility of the soil and change in natural climatic conditions that will cause our fields to decline in quantity and quality of our wheat crop.

Better take out an insurance policy NOW upon your own bread supply for the future by securing a slice of bread producing land.

THRESHING TIMES ARE BUSY TIMES.

BANKS OF IDAHO.

List of national, state and private banks in Idaho, showing capital, surplus and undivided profits, deposits and loans.

	Capital	Surplus & Undivided Profits.	Deposits	Loans
ADA COUNTY				
Boise:				
First National Bank of Idaho	$ 200,000	$ 360,000	$ 1,700,000	$ 1,800,000
Idaho National Bank	100,000	27,000	380,000	320,000
Pacific National Bank	200,000	75,000	1,000,000	850,000
Idaho Trust & Savings Bank	200,000	8,000	750,000	450,000
Boise Title & Trust Company	58,200	8,500	45,000	75,000
Boise City National Bank	250,000	255,000	2,500,000	2,400,000
Meridian:				
First National Bank	40,000	10,000	125,000	120,000
Eagle:				
Bank of Eagle	10,000	1,000	60,000	55,000
Kuna:				
Kuna Savings Bank	15,000	1,000	20,000	25,000
Star:				
Farmers Bank	25,000	3,600	130,000	80,000
Total for County	**1,098,200**	**749,100**	**6,710,000**	**6,175,000**
ADAMS COUNTY				
Council:				
First Bank of Council	10,000	5,500	95,000	75,000
Council State Bank	.....	.....	.....	.....
Meadows:				
Meadows State Bank	20,000	5,000	65,000	65,000
New Meadows:				
Meadows Valley Bank	15,000		40,000	30,000
Total for County	**45,000**	**10,500**	**200,000**	**170,000**
BANNOCK COUNTY				
Pocatello				
Bannock National Bank	50,000	27,000	260,000	250,000
Citizens Bank, Ltd.	100,000	23,000	420,000	400,000
Farmers & Traders Bank	100,000	4,600	280,000	280,000
First National Bank	50,000	132,000	480,000	480,000
First Savings Bank	25,000	30,000	160,000	165,000
Downey:				
Downey State Bank	12,500	1,000	50,000	30,000
McCammon:				
McCammon State Bank	25,000		45,000	60,000
Soda Springs:				
Largillier & Co.	10,000	6,000	70,000	35,000
Grace:				
Gem Valley Bank	15,000			
Bancroft:				
Bancroft State Bank	18,500	2,000	50,000	55,000
Total for County	**406,000**	**225,600**	**1,815,000**	**1,755,000**
BEAR LAKE COUNTY.				
Paris:				
Bear Lake State Bank	15,000	15,000	140,000	125,000
Montpelier				
Bank of Montpelier	20,000	11,000	255,000	210,000
First National Bank	50,000	20,000	250,000	200,000
Total for County	**85,000**	**46,000**	**645,000**	**535,000**
BINGHAM COUNTY				
Blackfoot:				
First National Bank	25,000	11,000	225,000	160,000
D. W. Standrod & Co.	100,000	39,000	500,000	400,000
Shelley:				
Shelley Banking Co.	26,300	5,500	85,000	70,000
Aberdeen:				
Bank of Aberdeen	10,000	2,000	25,000	20,000
Total for County	**161,300**	**57,500**	**835,000**	**650,000**
BLAINE COUNTY.				
Hailey:				
Hailey National Bank	50,000	18,000	325,000	290,000
Soldier				
First National Bank	25,000	1,500	100,000	80,000
Bellevue:				
Bellevue State Bank	23,150	3,000	150,000	140,000
Arco:				
Bank of Commerce, Ltd.	25,000	9,000	100,000	75,000
Carey:				
Carey State Bank	10,000		30,000	25,000
Total for County	**133,150**	**31,500**	**705,000**	**610,000**

IDAHO BANKS—Continued

	Capital	Surplus & Undivided Profits.	Deposits	Loans
BOISE COUNTY.				
Idaho City:				
Boise Basin Bank	12,950		40,000	35,000
Roseberry:				
Roseberry State Bank	10,000		55,000	35,000
Crawford:				
Intermountain State Bank	10,000	1,000	35,000	30,000
Sweet:				
Bank of Sweet	10,000	1,000	45,000	35,000
Total for County	**42,950**	**2,000**	**175,000**	**135,000**
BONNER COUNTY.				
Sandpoint:				
Bonner County National Bank	50,000	8,000	265,000	260,000
First National Bank	50,000	32,000	465,000	250,000
Bonners Ferry:				
First State Bank	15,000	8,000	150,000	100,000
Farmers & Lumbermens State Bank	15,000		40,000	25,000
Kootenai:				
First State Bank	10,000		40,000	30,000
Priest River:				
Citizens State Bank	10,000		35,000	35,000
Clark Fork:				
Bank of Clark Fork	15,000		30,000	30,000
Total for County	**165,000**	**48,000**	**1,025,000**	**730,000**
BONNEVILLE COUNTY				
Idaho Falls:				
American National Bank	50,000	20,000	155,000	120,000
Anderson Bros. Bank	100,000	100,000	600,000	500,000
Farmers & Merchants Bank	50,000	19,000	250,000	250,000
The State Bank	75,000	28,000	250,000	225,000
Total for County	**275,000**	**167,000**	**1,255,000**	**1,095,000**
CANYON COUNTY.				
Caldwell:				
American National Bank	50,000	10,000	250,000	200,000
Caldwell Commercial Bank	100,000	21,000	400,000	345,000
First National Bank	50,000	115,000	625,000	450,000
Western National Bank	50,000	10,000	250,000	160,000
Nampa:				
Bank of Nampa	100,000	7,500	450,000	370,000
Citizens State Bank	50,000	8,000	250,000	240,000
First National Bank	25,000	13,000	245,000	
Emmett:				
Bank of Emmett	25,000	7,000	180,000	125,000
First National Bank	50,000	19,000	125,000	120,000
Payette:				
First National Bank	80,000	36,000	350,000	350,000
Payette National Bank	75,000	35,000	300,000	250,000
Fruit Growers Bank	25,000			
Parma:				
Parma State Bank, Ltd.	80,000	80,000	300,000	350,000
Middleton:				
State Bank of Middleton	10,000		40,000	30,000
Fruitland:				
Fruitland State Bank	10,000	3,500	100,000	80,000
New Plymouth:				
Farmers State Bank	10,000			
Notus:				
State Bank of Notus	10,000		35,000	25,000
Total for County	**800,000**	**365,000**	**3,900,000**	**3,095,000**
CASSIA COUNTY				
Albion:				
D. L. Evans & Co., Ltd.	25,000	7,000	110,000	100,000
Burley:				
Bank of Commerce	19,750	3,150	90,000	75,000
Burley State Bank	25,000	4,375	135,000	100,000
Oakley:				
Farmers Comm'l & Savings Bank	25,000		40,000	40,000
Oakley State Bank	25,000	7,000	150,000	145,000
Total for County	**119,750**	**21,525**	**525,000**	**460,000**
CLEARWATER COUNTY.				
Orofino:				
Bank of Orofino	12,000	3,000	60,000	45,000
Fidelity State Bank	10,000	2,000	25,000	15,000
Elk River:				
Elk River State Bank	15,000		35,000	
Total for County	**37,000**	**5,000**	**120,000**	**60,000**

IDAHO BANKS—Continued

	Capital	Surplus & Undivided Profits.	Deposits	Loans
CUSTER COUNTY.				
Challis:				
First National Bank	35,000	4,800	80,000	100,000
Mackay:				
W. G. Jenkins & Co.	50,000	5,000	110,000	90,000
Total for County	**85,000**	**9,800**	**190,000**	**190,000**
ELMORE COUNTY.				
Mountainhome:				
Stock Growers State Bank	50,000	10,000	150,000	125,000
First National Bank	25,000	57,000	285,000	220,000
Glenns Ferry:				
Glenns Ferry Bank	20,000	7,000	140,000	90,000
King Hill:				
First Bank of King Hill	10,000	1,000		
Total for County	**105,000**	**75,000**	**575,000**	**435,000**
FREMONT COUNTY.				
St. Anthony:				
Commercial National Bank	25,000	15,000	170,000	120,000
First National Bank	50,000	67,000	400,000	300,000
St. Anthony Banking & Trust Co.	30,000	1,000	100,000	100,000
Rexburg:				
First National Bank	50,000	25,000	195,000	205,000
Rexburg State Bank	20,000	17,000	130,000	120,000
Rigby:				
Anderson Bros. Bank	10,000	18,000	150,000	125,000
Rigby State Bank	30,000	3 500	70,000	50,000
Sugar City:				
Fremont County Bank	10,000	2,649	50,000	40,000
Ashton:				
Ashton State Bank	11,315	9,000	60,000	55,000
Security State Bank	10,600	1,400	85,000	65,000
First National Bank	25,000			
Driggs:				
Driggs State Bank	25,000	7,000	90,000	100,000
First National Bank				
Roberts:				
Bank of Roberts	10,000	2,000	40,000	35,000
Total for County	**306,915**	**168,549**	**1,540,000**	**1,315,000**
IDAHO COUNTY.				
Grangeville:				
First National Bank	50,000	37,000	350,000	210,000
Bank of Camas Prairie	50,000	112,000	405,000	395,000
Grangeville Savings & Trust Co.	40,000	23,000	180,000	165,000
Cottonwood:				
First National Bank	25,000	18,000	185,000	150,000
German State Bank	25,000	3,000	100,000	80,000
Stites:				
Bank of Stites, Ltd.	10,000	3,000	50,000	50,000
Whitebird:				
Salmon River State Bank	25,000	3,000	60,000	70,000
Ferdinand:				
Ferdinand State Bank	12,500	3,000	65,000	35,000
Steunenberg:				
Bank of Steunenberg	10,000	1,000	50,000	35,000
Kooskia:				
State Bank of Kooskia	10,000	2,400	55,000	45,000
Elk City:				
Elk City Bank	10,000	2,000	10,000	5,000
Total for County	**267,500**	**207,400**	**1,510,000**	**1,240,000**
KOOTENAI COUNTY.				
Coeur d'Alene:				
Exchange National Bank	100,000	16,000	480,000	375,000
First National Bank	50,000	22,000	350,000	290,000
American Trust Co.	50,000	5,000	250,000	160,000
Coeur d'Alene Bank & Trust Co.	50,000	5,000	200,000	100,000
Rathdrum:				
Exchange Bank	30,000			
Rathdrum State Bank	25,000	15,000	120,000	95,000
St. Maries:				
Lumbermens State Bank	25,000	3,100	140,000	100,000
Kootenai County State Bank	15,000	1,000	140,000	70,000
Spirit Lake:				
Bank of Spirit Lake	25,000	8,000	140,000	80,000
Harrison:				
First Bank of Harrison	25,000	6,000	100,000	75,000
Post Falls:				
Valley State Bank	10,000	2,000	45,000	35,000
St. Joe:				
First State Bank	10,000	3,100	40,000	40,000

IDAHO BANKS—Continued

	Capital	Surplus & Undivided Profits.	Deposits	Loans
Plummer:				
State Bank of Plummer	10,000	1,000	45,000	45,000
Total for County	**425,000**	**87,200**	**2,050,000**	**1,465,000**
LATAH COUNTY.				
Moseow:				
First National Bank	50,000	58,000	305,000	480,000
First Trust & Savings Bank	50,000	10,500	400,000	350,000
Moscow State Bank	25,000	5,000	190,000	145,000
Kendriek:				
Farmers Bank & Trust Co.	25,000	4,250	80,000	90,000
Kendrick State Bank	25,000	4,000	75,000	75,000
Troy:				
First Bank of Troy	20,000	3,000	140,000	100,000
Genesee:				
First Bank of Genesee:	30,000	10,000	120,000	135,000
Genesee Exchange Bank	25,000	15,000	250,000	190,000
Potlateh:				
Potlatch State Bank	10,000	26,000	335,000	145,000
Deary:				
Latah County State Bank	15,000		50,000	45,000
Boyill:				
First State Bank	10,000	2,000	40,000	25,000
Juliaetta:				
Citizens State Bank	10,000			
Bank of Juliaetta	15,000	3,500	60,000	55,000
Total for County	**310,000**	**141,250**	**2,270,000**	**1,835,000**
LEMHI COUNTY				
Salmon:				
Citizens National Bank	100,000	24,000	230,000	245,000
Pioneer Bank & Trust Co.	34,060	17,515	200,000	175,000
Leadore:				
Leadore State Bank	26,500	500	50,000	45,000
Gilmore:				
Lemhi Valley Bank	12,000	1,200	30,000	10,000
Total for County	**172,560**	**43,215**	**510,000**	**475,000**
LEWIS COUNTY.				
Nezperce:				
Farmers State Bank, Ltd.	35,000	18,000	125,000	140,000
Union State Bank	50,000	6,000	145,000	135,000
Reubens:				
Bank of Reubens	10,000		80,000	70,000
Ilo:				
Ilo State Bank	12,500	9,500	240,000	170,000
Kamiah:				
Bank of Kamiah	10,000		35,000	35,000
State Bank of Kamiah	15,000	5,000	110,000	95,000
Vollmer:				
Vollmer Bank & Trust Co.	25,000	6,500	210,000	185,000
Winchester:				
Bank of Winchester	12,500	2,000	55,000	40,000
Total for County	**170,000**	**47,000**	**1,000,000**	**870,000**
LINCOLN COUNTY.				
Shoshone:				
First National Bank	25,000	38,000	160,000	110,000
Lincoln County National Bank	30,000			
Gooding:				
First National Bank	40,000	6,000	150,000	95,000
Lincoln County State Bank	10,000	1,250	80,000	55,000
Richfield:				
First State Bank	20,000	2,000	80,000	55,000
Hagerman:				
Farmers State Bank	14,000		10,000	
Hagerman State Bank	25,000	17,000	150,000	100,000
First National Bank	25,000			
Jerome:				
Farmers & Merchants State Bank	15,000	3,000	50,000	50,000
First National Bank	50,000	6,000	135,000	120,000
Wendell:				
First National Bank	25,000			
Wendell State Bank	15,000		40,000	35,000
Heyburn:				
Heyburn State Bank	10,000	3,500	65,000	45,000
Rupert:				
Commercial Bank	15,000	1,000	75,000	70,000
Rupert State Bank	10,000	4,000	95,000	70,000
Bliss:				
Bliss State Bank	10,000		25,000	25,000
Total for County	**339,000**	**81,750**	**1,115,000**	**830,000**

IDAHO BANKS—Continued

	Capital	Surplus & Undivided Profits.	Deposits	Loans
NEZ PERCE COUNTY				
Lewiston:				
Empire National Bank	100,000	5,000	225,000	200,000
First National Bank	50,000	185,000	1,800,000	1,100,000
Lewiston National Bank	100,000	58,000	950,000	675,000
Idaho Trust Co.	50,000	4,000	150,000	125,000
Gifford:				
Bank of Gifford	10,000	3,000	30,000	30,000
Culdesac:				
Bank of Culdesac	15,000	3,500	70,000	70,000
First Bank of Culdesac	10,000	2,000	100,000	85,000
Lapwai:				
Fort Lapwai State Bank	10,000		30,000	40,000
Peck:				
State Bank of Peck	10,000	2,250	40,000	40,000
Total for County	**355,000**	**262,750**	**3,395,000**	**2,365,000**
ONEIDA COUNTY.				
Malad:				
First National Bank	30,000	10,000	80,000	75,000
J. N. Ireland & Co.	40,000	12,000	150,000	135,000
American Falls:				
Evans State Bank	25,000	6,000	85,000	80,000
First National Bank	25,000	14,500	100,000	100,000
Preston:				
First National Bank	25,000	10,000	150,000	135,000
Idaho State & Savings Bank	25,000	6,000	140,000	125,000
Rockland:				
First State Bank	10,000		20,000	15,000
Total for County	**180,000**	**58,500**	**725,000**	**665,000**
OWYHEE COUNTY.				
Bruneau:				
Bruneau State Bank	25,000	18,000	125,000	115,000
Grandview:				
Grandview State Bank	20,000			
Total for County	**45,000**	**18,000**	**125,000**	**115,000**
SHOSHONE COUNTY.				
Wallace:				
First National Bank	100,000	62,000	1,300,000	1,000,000
Wallace National Bank	100,000	3,000	630,000	340,000
Kellogg:				
First National Bank	25,000	10,000	190,000	120,000
First State Bank	40,000	2,000	155,000	115,000
Wardner:				
Webber Bank of Wardner	20,000	8,000	100,000	75,000
Mullan:				
First National Bank	25,000	4,000	200,000	125,000
Murray:				
State Bank of Murray	10,000	2,000	25,000	25,000
Total for County	**320,000**	**91,000**	**2,600,000**	**1,800,000**
TWIN FALLS COUNTY.				
Twin Falls:				
First National Bank	100,000	30,000	550,000	445,000
Farmers & Merchants Bank	100,000		300,000	250,000
Twin Falls Bank & Trust Co.	100,000	6,000	630,000	480,000
Buhl:				
Buhl Bank & Trust Co., Ltd.	25,000	4,500	125,000	105,000
Citizens State Bank	38,300	2,000	125,000	105,000
Filer:				
Filer State Bank	10,000	7,000	80,000	50,000
Kimberly:				
Bank of Kimberly	30,500	1,500	130,000	85,000
Milner:				
Milner State Bank	10,000	12,000	125,000	75,000
Hollister:				
Bank of Hollister	10,000	2,000	50,000	40,000
Hansen:				
Bank of Hansen	15,000		25,000	30,000
Total for County	**438,800**	**65,000**	**2,140,000**	**1,665,000**
WASHINGTON COUNTY.				
Weiser:				
First National Bank	75,000	37,000	450,000	530,000
Weiser National Bank	50,000	18,000	160,000	170,000
Weiser Loan & Trust Co.	62,500	4,000	90,000	105,000
Cambridge:				
Peoples Bank	20,000	4,500	100,000	95,000
Midvale:				
Bank of Washington County	25,000	18,000	225,000	140,000
Total for County	**232,500**	**81,500**	**1,025,000**	**1,040,000**
TOTAL FOR STATE	**$7,120,625**	**$3,166,639**	**$38,680,000**	**$31,775,000**

A Brotherhood of Commonwealths

THE Western Governors' Special train was a strong stroke of publicity that gave the western states a dignified, pursuasive character of publicity that has yielded excellent results. The occasion of the special train afforded a splendid opportunity for our western people to get better acquainted with the east and the eastern people to get better acquainted with the west and western development.

AN IDAHO IDEA.

The idea originated in Idaho; other states readily joined in the enterprise. The states participating were: California, Oregon, Washington, Idaho, Montana, North and South Dakota, Wyoming and Minnesota. Each state equipped its own exhibition car and furnished representatives to accompany the train. The governor of each state personally accompanied the train. The itinerary was made possible through the courtesy of Mr. L. W. Hill, president of the Great Northern Railway, which furnished and equipped the train. The State Immigration Bureau financed Idaho's share of the expense and equipped the exhibition car. The train left St. Paul the 27th of November, and covered an itinerary of twenty-one days, stopping at the following cities: Chicago, Kalamazoo, Grand Rapids, Detroit, Toledo, Cleveland, Buffalo, Rochester, Syracuse, Utica, Albany, Washington, D. C.; Baltimore, Philadelphia, New York City, Harrisburg, Pittsburg, Columbus, Cincinnati, Indianapolis and St. Paul, as well as many intermediate points where special appointments were made.

INTERIOR OF THE IDAHO EXHIBIT CAR ON THE WESTERN GOVERNORS' SPECIAL, AND SHOWING EXTERIOR SECTION OF THE EXHIBIT CAR AND THE IDAHO DELEGATION.

Perhaps no undertaking of an advertising or publicity nature has ever attracted the attention which accrued to the Western Governors' Special. The train was both unique and original. Its arrival in the various cities was heralded weeks in advance, and the people in these cities came to see the much discussed wonders of the west, as exemplified by the exhibition products on the train, and to hear the message which the representatives of the west had for them. In speeches, newspapers and magazine interviews, the governors had many messages of brotherhood, good cheer and assurance.

GENEROUS HOSPITALITY.

In several instances when the Governors' Special entered a state the host governor, who was usually accompanied by his staff and other public spirited men, joined the train and had their private car attached to the Governors' Special, and accompanied the special train and party upon their itinerary through their respective commonwealths. The western governors and members of the party were shown about the cities where the train was scheduled to stop and an opportunity was given to the visitors to become familiar with the manufacturing and other resources of the respective cities, which in many instances had furnished large amounts of manufactured goods for the newly developed west.

The felicitations that were exchanged indicated that the people of the older states felt that the development of the western country was absolutely essential for the best welfare of the east. The east must continue to furnish to the west large quantities of manufactured material, structural steel, and many kinds of products that must always come from the older established manufacturing districts. On the other hand many of the eastern states are declining in the production of foodstuffs and must look to the western states for their future supply of products that must feed the rapidly increasing millions of population of the United States and must also now supply the demand for export foodstuffs that were formerly produced in the east.

The west is developing at a tremendous rate, and is using and will continue to use large quantities of eastern manufactured goods. It has been the history of all time that the older settled districts must furnish their sons and daughters and capital with which to develop the newer districts.

HOPES THAT HAVE BEEN REALIZED.

The governors represented the territory comprising the last of the great new west. It has required large sums of eastern capital to finance the gigantic engineering problems that the railways have encountered in tunneling mountains and bridging streams in extending the transcontinental lines. The eastern members of Congress have responded to the applications for appropriations that come from the western members of Congress on behalf of the great development enterprises that the government has shared. Many eastern members of Congress and their friends felt that every dollar that had been expended by the Congress of the United States was a wise expenditure in developing the great west, after seeing the products from the lands that have been reclaimed through the vast irrigation enterprises and learning of the wealth-producing crops that are being furnished to supply the ever-increasing demand from the more densely populated east.

The message delivered by these governors, speaking for their respective commonwealths, contained nothing of an unduly triumphant character, rather the burden of their thoughts, as expressed upon every occasion, was in the form of an appreciation of the splendid support that the west had received from the east and the middle-west; its progress, which to some appeared marvelous, and marvelous though it was, each speaker felt that his report was indeed a modest one as compared with the report that history will offer only a few years hence.

One of the impressive features of the trip was the thought that must come to all states in the Union and to all parts of the world, that the representative men of these various states were banded together, pledged to a common purpose. The success of any one state must be shared by each of the states. The problems of any state at once become the problems of all states. These representatives were anxious that their own commonwealths should be guided by the experience of the older states, thus eliminating expensive disappointments that might otherwise interfere with the safe and certain, as well as speedy development of the newer west.

HONORED BY THE PRESIDENT.

In Washington, D. C., the party was honored by President Taft with an invitation to dinner at the White House, which is said to have been one of the most cordial and yet elaborate entertainments during his incumbency in office.

The newspapers and magazines were extremely generous and courteous. At every opportunity eager crowds gathered about the train anxious to learn more about the products of the great west, as shown in the exhibition cars, and to hear messages from these states. The actual number of visitors through the exhibition cars, as registered by the turnstile on the Idaho car, was 92,200 people. Seven thousand two hundred names were registered by visitors on the Idaho car asking for literature and information relative to Idaho's resources.

MAGNITUDE OF THE WEST EXEMPLIFIED

An interesting incident occurred on the trip as the party was about to leave Baltimore. It was discovered that the Great Northern coaches, which are operated regularly upon the western railway lines, were too large to pass through a railway tunnel upon a main line between Baltimore and Washington. This made it necessary for the party to take passage to Washington upon another train, while the special train was detoured around the tunnel.

GOVERNORS AND VISITORS AT THE WESTERN GOVERNORS' CONFERENCE.

Before the Governors of the Western Governors' Special had closed their itinerary and departed for their respective homes, they organized the Association of Western Governors. Their first annual conference was held at Boise August 1, 2 and 3, 1912.

Reading the above photograph, seated from left to right: Governor Tasker L .Oddie, Nevada; Governor William Spry, Utah; in the center, Governor James H. Hawley, Idaho; Governor Edwin L. Norris, Montana, and Governor Oswald West, Oregon. The governors of Minnesota, Colorado and California sent their personal representatives.

Among other important subjects discussed were:

"Employment and Reformation of Convicts"—Governor West, Oregon.

"The Good Roads Factor in Western Development"—Governor Hawley, Idaho.

"What the Panama-Pacific International Exposition Means to the Whole West"—Governor Johnson, California.

"Entertaining the Exposition Visitor on His Journey through the West"—Governor Oddie, Nevada.

"Conservation of Water Power"—Governor Shafroth, Colorado.

"State Supervision of Investments"—Governor Hay, Washington.

"Reclamation of Arid Lands"—Governor Carey, Wyoming.

"Storage and Use of Flood Water"—Governor Spry, Utah.

"The Value of Concerted Service"—Governor Norris, Montana.

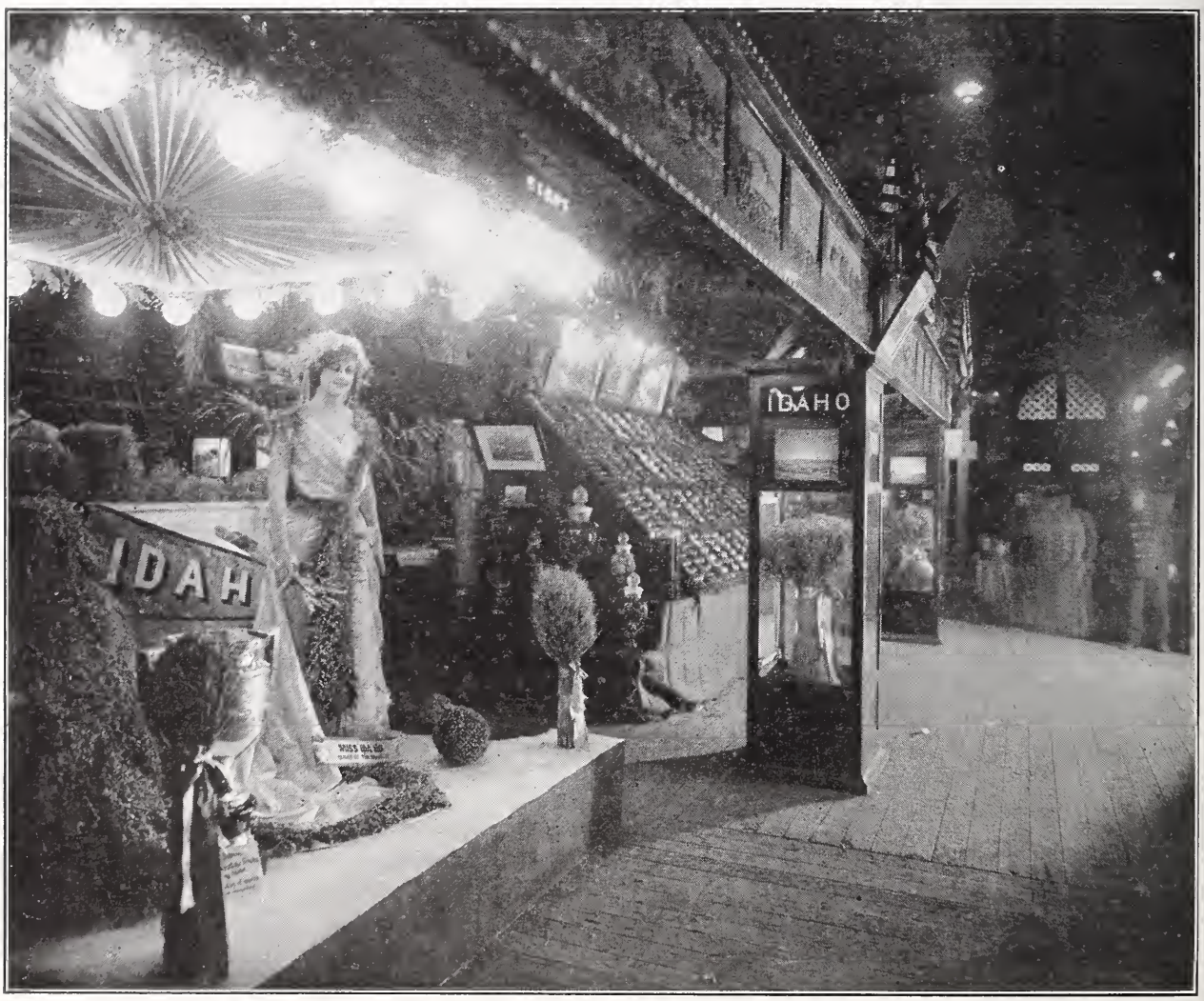
This conference marked an important event in the progress and development of these western commonwealths. The 1913 conference will be held at Salt Lake City.

Miss Ida Ho at the St. Paul Land Show

This picture shows Miss Idaho, Queen of the Harvest, a central figure of the Idaho state exhibit as it appeared at the 1911 St. Paul Land Show.

The gown was trimmed with a wide variety of grains and grasses commonly grown in the state. Idaho's state colors—gold and silver—predominated.

A mantle of specially prepared grains was used in the decorative scheme. The columns supporting the superstructure of the booth contained magnificent sheaves of grain. Three sides of the columns were set with plain glass below and a large mirror in the back. Colored transparencies showing Idaho views were set in the smaller openings above. Metallic tungsten lamps reflected sunshine directly into the shocks of grain and also illuminated the photographic transparencies. Large numbers of jars of processed fruits in liquid form were shown to good advantage. Two good-sized miniature wagons with glass boxes displayed threshed wheat and oats.



The vast lumbering interests of Idaho had a prominent place and the mining exhibit was comprehensive and attractive to large numbers of visitors. Potatoes and apples divided honors about equally. These are two products that Idaho is shipping into many states of the union and foreign countries. The view herewith illustrated shows less than one-fourth of the entire exhibit. Two mammoth, double electric Idaho signs were hung above and at either end of the exhibits. State exhibits were put on at the Omaha, Pittsburg and St. Paul land shows, and at the International Dry Farming Congress at Colorado Springs in 1911, and at Lethbridge, Alberta, Canada, in 1912. At each of the shows where there were competitive classes, Idaho entered and won her share of the awards. Among other important awards was the grand sweepstakes on potatoes at St. Paul. Idaho also won the sweepstakes on car lot exhibit on apples at the National Apple Show at Spokane in 1911.

Mining in Idaho

THE DISCOVERY of gold in California in 1848 and the subsequent rush of gold seekers to the country west of the Rockies marks an heroic epoch in the history of the United States.

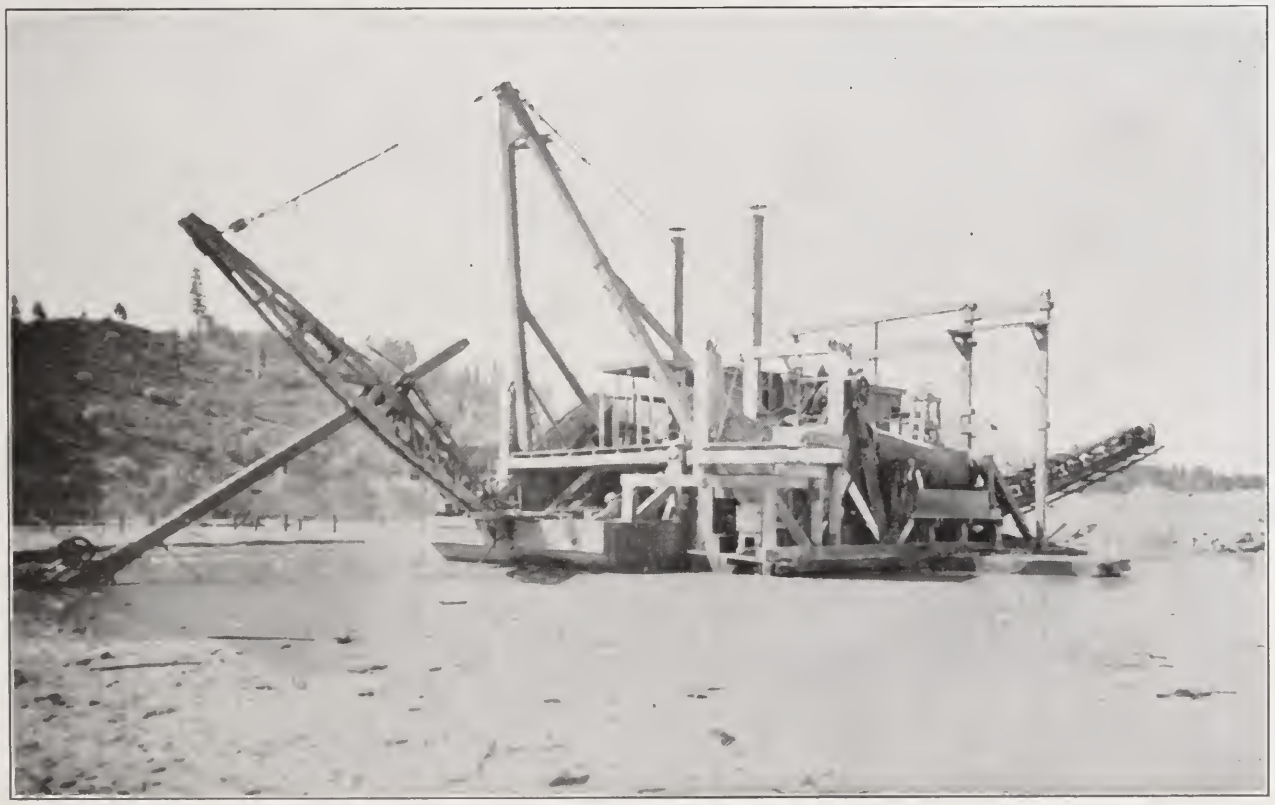
The great northwest, through which Lewis and Clark passed on their historical journey of discovery to the Pacific was destined a few years later to give to the world a new mining field within the confines of what is now the state of Idaho.

Here in the year 1860 gold was discovered in the Orofino district. The discoverers, elated over their success and the fine quality of the gold yielded by the discovery, gave to the district the significant Spanish name which it now bears: *Orofino*, (fine gold).

Other discoveries followed rapidly. In 1862 the Boise basin yielded up the secret of its placer wealth and by the spring of 1866 placer mining was extensively carried on there. In the summer of 1862 further excitement was created over the discovery of gold at Florence in Idaho county. In 1863 the rich deposits in Owyhee county on what is known as War Eagle Mountain, in the Silver City district, were located.

Prospecting and active mining operations were pursued with such energy that by 1866 the estimated output of Idaho for that year was about $12,000,000. In 1868 the mining industry had assumed such proportions that the building of a government assay office in Idaho became an urgent necessity, consequently a bill was passed by congress in that year making an appropriation for this purpose. Boise, the present capital of the state, was the site chosen for the institution and a substantial stone building with two stories and basement was erected. Since its erection $75,000,000 worth of Idaho gold and silver bullion have passed through its doors to the government mints.

As an illustration of the value of the Boise assay office to the intermountain mining region, a deposit of gold dust was recently made valued at $40,500.37. The assaying and melting charges amounted to only $157.37, or less than four-tenths of one per



DREDGE USED IN PLACER MINING.

One of the large dredges that operate in the Boise Basin. There are six large dredges in operation in gold mining in Idaho, two in Boise county, two in Lemhi and two in Clearwater.

Electricity furnishes the motive power. Where conditions are right, the dredge method of gold mining is one of the most profitable forms of mining. Along some streams of the state, particularly the Snake river, the particles of gold are so fine that they float in the water and cannot be recovered with profit.

cent upon the total value of the deposit. This is the only assay office in the United States that receives deposits amounting to less than $100. It is a great convenience to the small operator or lone prospector. The fees charged cover the upkeep of the office and it is therefore not an expense item to the U. S. mints. It is a great convenience to thousands of miners and it serves to foster the mining industry.

If the complete history of the early mining period in Idaho could be written it would read like romance; it would recount tales of patience and perseverence; of hope and disappointment; of hardship and success; of danger and heroism—tales fit to find a place in the annals of chivalry.

Before the establishment of the assay office at Boise, bullion was shipped to Portland, thence to San Francisco. From Boise to Umatilla, Oregon, the haul was by stage, a distance of almost 300 miles. It is said that the largest load ever hauled over this road consisted of 2,100 pounds of bullion, two express messengers, two treasure boxes of gold dust, 125 pounds of mail and seven passengers. This was the best paying load ever hauled and the trip was made without accident and on schedule time.

It will be seen from the foregoing that the marketing of bullion after it was produced was a task full of difficulty, attended with much risk and very expensive. Furthermore, miners were obliged to pay heavy commissions in order to realize cash returns from their bullion or gold dust.

The establishment of the assay office at Boise changed all this so that the owner of bullion or gold dust could dispose of it directly to the government and receive therefor its true value in currency or coin without the payment of heavy commissions.

While it is true that the "lure of gold" was responsible for the opening up of the rich mineral deposits of Idaho, it by no means follows that gold is the sole product of her mines. It is worthy of note, however, that notwithstanding Idaho gold mines have been producing for upwards of fifty years, authentic data shows that the production of gold in 1912 was normal.

The value of the output of Idaho mines for the year 1912 * is shown as follows:

		VALUE.
Gold, ounces	75,000	$ 1,500,000
Lead, pounds	323,877,400	12,955,096
Silver, ounces	8,576,620	5,446,153
Copper, pounds	7,784,000	1,362,200
Zinc and other metals		2,236,551
		$23,500,000

The comparison with the production the past four years indicates that the mining industry in Idaho is having a steady, normal growth and development.

The value of the output has increased year by year.

YEAR	VALUE
1909	$15,606,862
1910	17,135,695
1911	19,000,000
1912 *	23,500,000

* These figures are based on the most reliable estimate to be had at the time this report went to press.

SILVER AND LEAD.

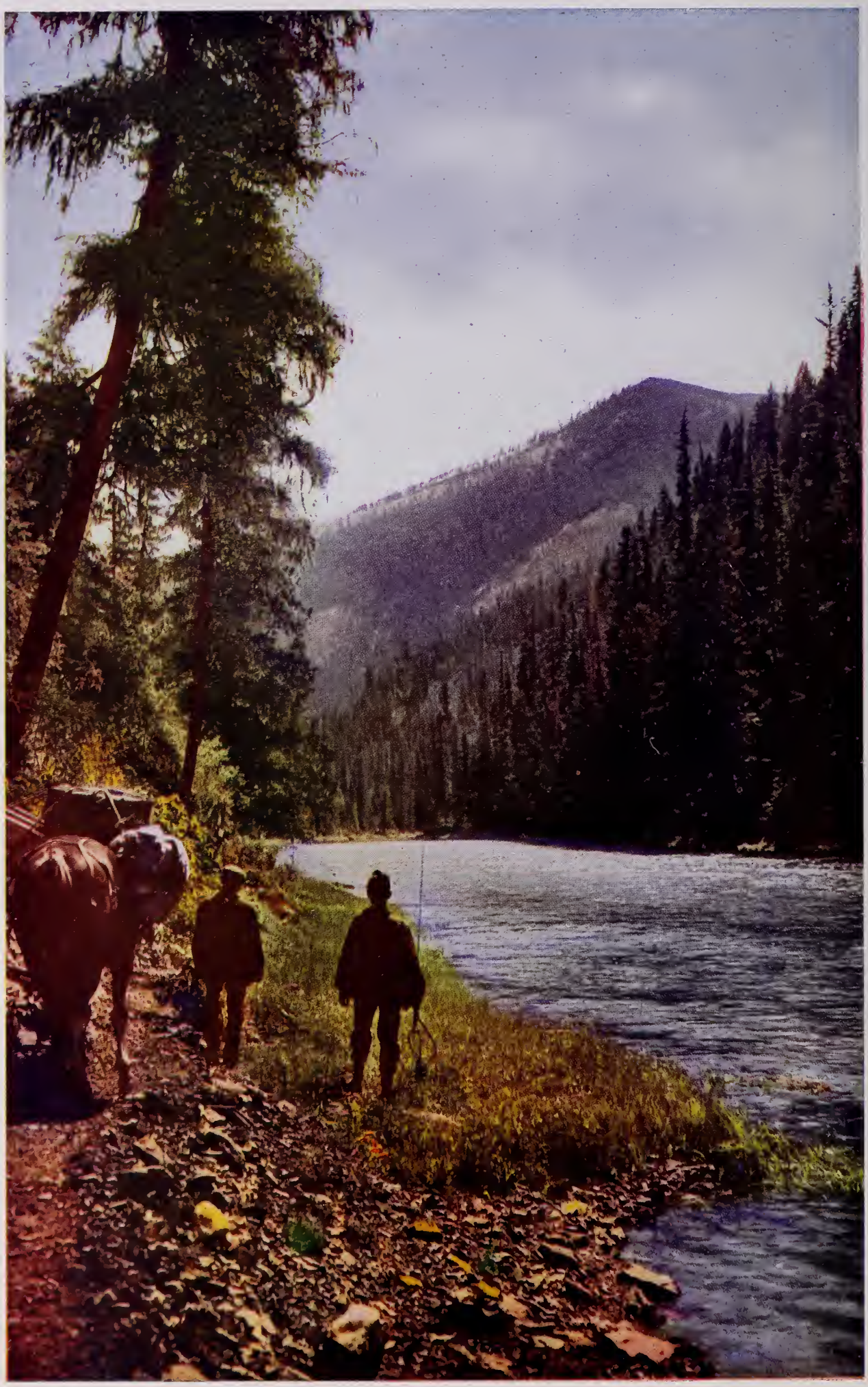
The lead-silver (galena) ores are Idaho's most important mineral production. New discoveries of this ore have been recently made and development carried to the producing stage, by reason of which it may be confidently expected that the future will continue to see a marked increase in the output of this important metal, while the output of the important associated silver values will increase in like ratio.

The chief source of supply of the lead-silver ores is the famous Cœur d'Alene district in Shoshone county. The mines of the Gilmore district in Lemhi county have also made a splendid output during 1912. In both these districts important new properties are coming to the stage of production. A new field has been opened up in Bonner county where two properties have been brought to the producing stage and have a large quantity of high grade ore in sight.

The lead output of Idaho for the year 1912 equalled 55% of the value of the entire mineral production in that year.

The lead output for 1912 is estimated to have been 323,877,400 pounds, which equals 40% of the entire lead output of the United States.

The larger part of the silver produced in Idaho comes from the lead-silver



THE PROSPECTORS.

"See America First"—Begin with Idaho.

, with the exception of the output from the DeLamar mines and others where er is associated with gold, and the copper ores of the state, which always carry er in important amounts.

The silver output of the state in 1912 is estimated to have been 8,576,620 ounces, orth $5,446,153.

COPPER.

There was an increase in copper production in the state in 1912, the estimated output being 7,784,000 pounds. This was derived principally from two mines with some small shipments from scattering small producers. The Snowstorm mine in Shoshone county and the White Knob mine in Custer county were the heavy producers. The bulk of ore taken was shipped to different copper smelters of the west.

The Snowstorm mine has paid over a million dollars in dividends and is the most important copper producer in the Cœur d'Alene district. However, a recent discovery near this property gives promise of equaling or even excelling the Snowstorm as a producer of copper-silver ore.

The wonderful advance in electrical science and the phenomenal increase in the use of all kinds of electrical appliances calls for an ever-increasing quantity of copper. The world's production of copper has not kept pace with increasing demands and the price has consequently risen steadily until it might be said that the fortunate possessor of a high-grade copper mine has "a gold mine."

THE PROSPECTORS.

The prospector is the advance agent of the miner.

Had it not been for the faithful and persevering efforts of the prospector, the greater portion of our hidden mineral wealth would never have been discovered. It is true that some of our most valued deposits have been discovered in a more or less accidental way but generally, it has required a careful study of the topography of a district and a knowledge of geology and the relation of one character of formation to another—angles, lodes, veins, faults and pitches all have a significance to the trained prospector.

The footprints of the prospector are more frequently found along unblazed trails than in beaten paths. The pack-horse carries supplies sufficient for the needs for weeks. While one is fishing in the mountain streams to supplement the food supply, another will "pan" for free gold along the stream. Even a faint suggestion of "color" as the soil and gravel is being panned will furnish excuse for an impromptu camp, that further explorations may be made. Placer mining continues to yield sufficient gold to allow profitable returns.

Idaho mineral deposits furnish a wide range of valuable ores.

As shown by the section of this report which treats of the mining industry, it will be seen that there are many undeveloped fields awaiting capital and skilled men to develop highly profitable property.

Those who have experienced the invigorating mountain air, charged with the delicious fragrance of the fir, pine and spruce, know what it means to have appetites rejuvenated and made "better than new" during a few days' outing amid surroundings as herewith shown. It is, therefore, not surprising that mining camps furnish hungry markets that insist upon large quantities of food supplies from the agricultural districts of the state.

THE PROSPECTORS.

"See America First"—Begin with Idaho.

ores, with the exception of the output from the DeLamar mines and others where silver is associated with gold, and the copper ores of the state, which always carry silver in important amounts.

The silver output of the state in 1912 is estimated to have been 8,576,620 ounces, worth $5,446,153.

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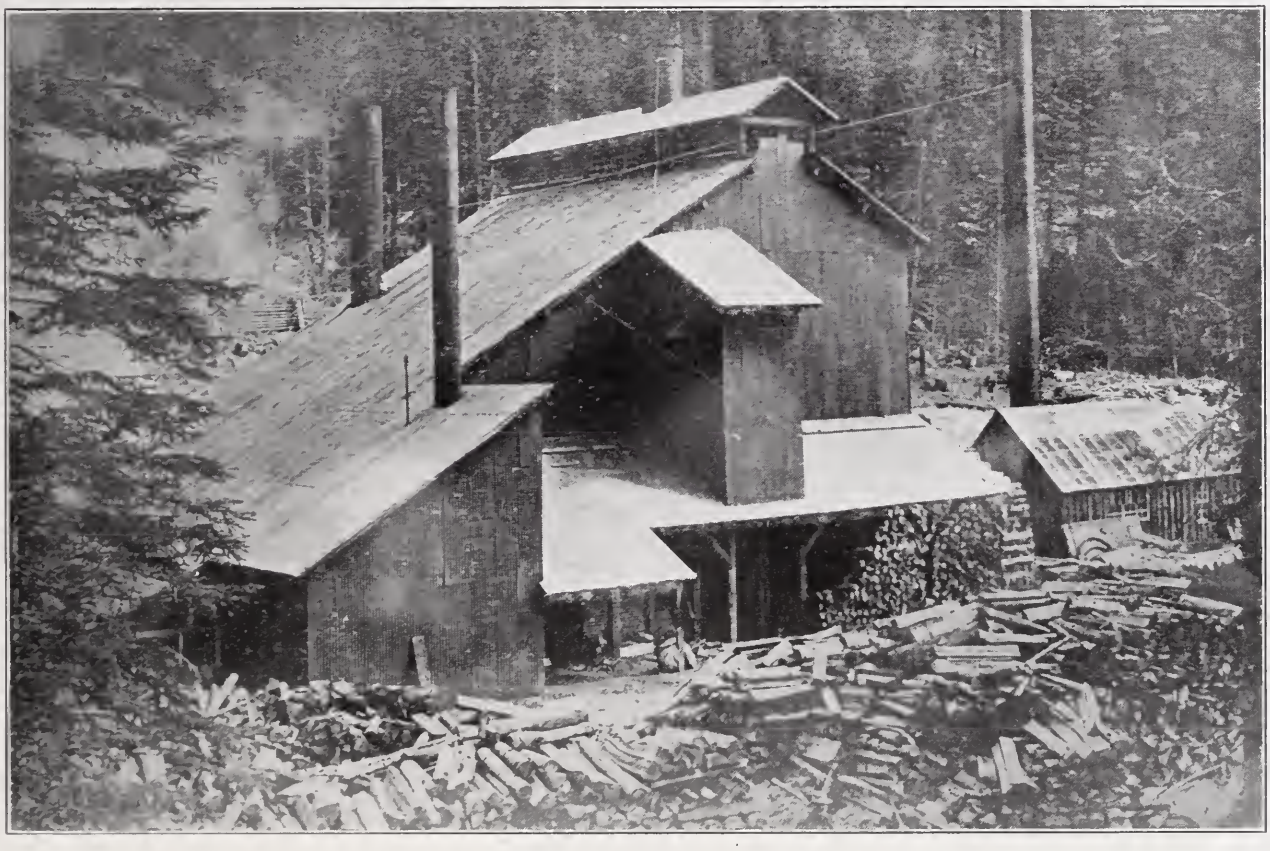


THE LOST PACKER.

Showing part of the equipment at the Lost Packer mine, located in Custer county, a copper mine that also carries considerable gold. The Lost Packer has produced a snug fortune for the owners.

The Caledonia mine in Shoshone county is not one of the large properties but they have 120 employes that receive a daily average wage of $3.75 per eight hour day. This pay-roll distributes more than $10,000 per month. The Caledonia distributed $52,000 in the form of dividends for the 1912 season. The Stewart mine in the same county had a lead-silver output aggregating a trifle more than $1,000,000 in 1912. The Gold Hill and Iowa Mines company, located near Quartzburg, Boise county, had a total output amounting to $52,000 in 1912.

During the year ending August 31, 1912, the total production of the Federal Mining and Smelting company's mines was valued at $4,911,996. Mining, development and smelting totaled $4,053,730, leaving net profits at $858,265 and after adding other income and deducting general expenses the balance was $895,429. Out of this, $749,131 was paid in dividends, leaving $146,298 surplus. The profit and loss account surplus now stands at $1,324,026. The Morning Mine gave a $201,419 increase of earnings over the previous year.

The labor pay-roll of the mining industry of Idaho distributes more than $1,000,000 each month in the year. A considerable portion of this vast sum is expended for foodstuffs. Mines are seldom located in an agricultural district.

There are large mineral areas in the state as yet untouched, and these offer an inviting field to the prospector. Railways and wagon roads are under construction that will relieve the transportation problem. Prospectors have located rich deposits in the Sawtooth range of mountains that will be extensively worked when better transportation becomes available.

ZINC.

There were 16,417,080 pounds of zinc produced in the state in 1912. This metal is produced principally in the Cœur d'Alene district. The ore bears associated values of importance in silver and lead. The Wood River district has a number of promising sources of zinc mineral associated with high values in gold, silver and lead and are of a desirable character for easy concentration and separation. This district has been made much more accessible during the past year by a railway extension which will greatly reduce transportation costs.

There are several other important zinc bearing districts, notably at Resort in Idaho county, and at South Mountain in Owyhee county.

PHOSPHATE DEPOSITS.

There are very extensive prosphate deposits in Idaho, extending from the southern boundary of the state well toward the northern boundary. Some of these deposits show as high as 46% available phosphoric acid.

These properties extend to the Oregon Short Line railways at various points and are situated in Bear Lake, Bannock, Bingham, Bonneville and Fremont counties

A recent United States Geological Survey report, covering only nine townships, outlined an evident deposit of this valuable mineral within reasonable minable depth amounting to 1,425,000,000 long tons.

Nearly all of the phosphate rock now shipped from the fields of the western United States is sent to the Pacific coast where it is used in the manufacture of fertilizers. In this practice the rock is finely ground and mixed with sulphuric acid. Nearly equal parts by weight of acid and rock phosphate are used. This forms an acid calcium phosphate, which when dried and pulverized is the substance sold as superphosphate.

The superphosphate obtained by this process includes a considerable proportion of gypsum produced in the chemical reaction by which the superphosphate itself is formed. This gypsum dilutes the acid calcium phosphate in a mixture which can not readily be separated. Therefore these fertilizer products have a considerably lower percentage of phosphoric acid than the rock from which they are made. In the form of superphosphate, however, the phosphoric acid is more readily soluble in the weak acid soil solutions, and it appears to be more "available" as a plant food.

The experience of foreign countries whose soils have become exhausted by long-continued use shows the importance that will some day be attached to our own phosphate resources. For the present our phosphate fields will probably be developed in accordance with the increasing demand, and this growth must depend to a large extent on an intelligent understanding of the value and the proper methods of using such fertilizers.

This mineral furnishes one of the most important elements of plant food. In many sections of the United States the natural deposits of phosphates have become so exhausted that crops can no longer be raised with profit, except by applying phosphates in some form. Experiments have demonstrated that these depleted soils are yielding an increase amounting to from 100% to 500% by applying commercial fertilizer rich in available phosphoric acid. Sulphuric acid in large quantities is available as a by-product from the great copper smelters located in the intermountain district. With this vast quantity of rich natural phosphate deposit and sulphuric acid, and other equipment readily available for processing the rock, it is very evident that the development of this industry will soon become Idaho's most important mining and manufacturing enterprise.

The relation of rock phosphate to soil fertility is treated more fully elsewhere in this report.

COAL.

During the past year the Driggs extension of the Oregon Short Line railway has tapped the Teton country in the upper Snake river section, where rich coal fields have already been opened up. The coal deposits in the Teton district have been estimated at 600,000,000 tons of high grade domestic and steam coal similar to the Rock Springs deposits. These deposits are owned locally and have been worked in a limited way serving the local trade. With railway transportation facilities now available and the settlement of questions of title, by the Department of the Interior, these deposits offer a field for extensive mining upon a commercial scale with a ready market near at hand for a large output.

Labor

THE STATE OF IDAHO has not been an industrial state, generally speaking, in the past, and compared with other states, there has been very little on the subject of labor to give concern. It is safe to say, however, that Idaho will have a place among the industrial states of the Union in the not far distant future, and provision should be made to handle the problems relating to labor and gather such information and data regarding the same which will follow this condition.

Many young men and women of limited means find healthful employment on the farm and in the home as assistants. In this way they may spend a year or two, learning to "know" the country in the meantime, so that when later, a little capital has accumulated profitable investment may be made.

The west is democratic in its tendencies, and those who work for hire will find employers, as a rule, giving to them that consideration and respect demanded by their manhood and their womanhood.

While unions exist representing almost all the crafts and trades in the state, there are many non-union workers. Aside from the strike among the employes of the Harriman railway lines in 1911, which affected operatives on these lines within the state of Idaho, there have not been within recent years any serious labor disturbances.

It is believed that, in general, the trades and crafts are represented in Idaho by a body of men above the average to be found in older communities. The reason for this is not far to seek. It takes ambition to cause a man to break away from familiar surroundings and seek his fortune in a new field. It also takes money to effect the change. The poor or indifferent workman has neither of these essentials and so must remain where fortune placed him.

The chief industries that employ labor in Idaho are the railroads, lumber industry, mines, irrigation construction, hydro-electric power construction, railway extensions, sugar industry, brick making, municipal and other building operations.

Wages for common labor range from $2.00 to $3.00 per day, except in mining, where almost no labor is paid under $3.00 per day, ranging up to $6.50 per day. Skilled labor, generally speaking, is paid from $4.00 to $6.50 per day. Farm labor commands from $35.00 to $50.00 per month with board and room, and household service from $5.00 to $10.00 per week with board and room.

The Constitution of the state of Idaho has, among other provisions, the following with respect to labor:

"ART. XIII: SEC. 2. Not more than eight (8) hours actual work shall constitute a lawful day's work on all state and municipal works, and the legislature shall pass laws to provide for the health and safety of employes in factories, mines and ore reduction works."

In accordance with this provision of the Constitution the following has been enacted by the legislature:

"SEC. 1461. Not more than eight hours' actual work shall constitute a lawful day's work on all state, county and municipal works; *Provided,* That nothing in this article contained shall be construed as meaning any labor except manual labor, employed by the day, and nothing in this article contained shall apply to state, county or municipal officials, or to the employes of the state, or of any county or municipality, who are paid monthly or yearly salaries."

Section 1462 provides that all bids on any state, county or municipal works shall expressly declare that all laborers and mechanics are to be employed on the basis of an eight hour day.

"SEC. 1463. The period of employment of workingmen in all underground mines or workings shall be eight hours per day, except in cases of emergency where life or property is in imminent danger.

"SEC. 1464. The period of employment of workingmen in smelters, ore reduction works, stamp mills, concentrators and other places where metalliferous ores are being treated, refined and reduced for the purpose of obtaining the metals thereof, shall be eight (8) hours per day, except in cases of emergency where life or property is in imminent danger."

Section 3 of Article 13 of the Constitution restricts convict labor. And Section 4 prohibits the employment of children under fourteen (14) years of age in underground mines.

Restrictions are placed on the employment of children, and Section 1469 of the Statutes prohibits more than nine (9) hours labor in any one day by children under sixteen years of age.

Section 1472 prohibits the employment of minors in saloons, or in any place where intoxicating liquors are prepared or offered for sale.

Article 13, Section 5 of the Constitution and Article 3, Section 1457 of the Statutes prohibit the employment of aliens on any state or municipal works.

An employers' liability act was passed and became effective upon its approval March 6, 1909.

Adequate legislation providing for mechanics' lien including attorney's fees and costs has been enacted.

Section 10 of the Revised Codes of Idaho relating to legal holidays has been amended to include the first Monday of September which is designated as a holiday to be known as Labor Day.

Attention is invited to the table shown on page 150 of this report in which is given data relative to various trades and crafts within the state.

A WINTER SCENE IN THE LEMHI COUNTRY.

The Town Family Cow

DOES IT PAY for a family in the city or in a town to keep a cow?

Undoubtedly this depends upon circumstances to a certain extent. For a family the members of which know nothing or care nothing about requirements as to food, shelter, care and general treatment of animals, the purchase of an animal of any description would be folly. But, on the other hand, Idaho conditions as to climate, abundant green pasturage during six months of the year, easily accessible from city or town, and the reasonable cost of first class alfalfa hay and mill feed during the remaining six months of the year make the ownership of a family cow by those who have average understanding as to her care, very profitable.

The data shown herewith gives the records of two family cows. There is nothing remarkable about these cows that led to their selection for this data. They are both Jerseys, practically full blooded, and their records are given for the reason that the owners have kept exact data as to their production and cost of feed, etc. The records are not considered remarkable or startling in any respect—they simply show what a fairly good cow will produce under city conditions.

Period shown, November 13, 1911 to November 13, 1912:

Receipts—		
Cash received from milk sold @ 8c per quart		$188.61
Milk used in family of owner (2 qts. per day @ 8c per qt.)		58.40
One calf (heifer)		10.00
Total receipts		$257.01
Expense—		
Interest on investment in cow, one year @ 8%	$ 8.00	
Pasture, six months @ $3.00	18.00	
Feed, six months @ $6.00	36.00	
License to sell milk one year	1.00	
Stable rent, twelve months @ $1.00	12.00	
Service of cow	3.00	78.00
Net profit on cow for one year		179.01
Total		$257.01

The records of another party who kept accurate account of the cost of keeping a cow and the receipts are herewith shown.

Period July 15, 1912 to January 8, 1913:

Receipts—		
Cash received from milk sold @ 8c per quart		$ 63.71
Milk used in family of owner @ 8c per quart		33.60
One calf (heifer)		10.00
Total receipts, 5.8 months		$107.31
Expense—		
Interest on investment in cow, @ 8%, 5.8 months	$ 2.63	
Feed and pasture, 5.8 months	36.00	
License to sell milk	1.00	
Stable rent, 5.8 months @ $1.00	5.80	
Service of cow	1.00	47.03
Net profit on cow for 5.8 months		60.28
Total		$107.31

At the above rate this cow would show a profit for the entire year of $124.80.

The cows which made the records above given are owned, one by a minister, the other by a contractor. During the summer months these animals are kept in pasture. During the winter months they occupy stables at the rear of town lots.

Milk is an ideal medium for the growth of bacteria, hence a peculiar sense of security and contentment is enjoyed by the family whose milk supply is produced under their own supervision.

There is deep satisfaction, too, in finding the morning cup of coffee flavored with the "top" of the last night's milk, and the cereal an island floating in a sea of yellow cream.

The surplus milk may be made into "junket," fed to the poultry or churned and butter sufficient for the average family produced without a "scent."

Buttermilk is a by-product most healthful as a beverage, or it may be turned into most delicious "cottage cheese," and the resulting whey mixed with the poultry ration.

As a matter of fact, Idaho's many excellent dairies must continue to supply most town and city dwellers. But for those who are inclined, a small tract of land from one-half acre down to a large city lot providing space for home production of milk, butter, eggs, poultry, vegetables, berries, fruit and flowers, will reduce in a very substantial way the cost of living.

PROFESSIONAL, INDUSTRIAL AND COMMERCIAL STATISTICS OF THE PRINCIPAL TOWNS OF IDAHO.

City or Town	Population	Churches	Ministers	Public Schools	Teachers	Physicians	Dentists	Lawyers	Barbers	Carpenters	Painters and Paper-hangers	Bricklayers and Masons	Plasterers	Blacksmiths	Hotels	Newspapers	Elevators & Warehouses	Flour and Grist Mills	Waterworks	Elec. Light & Gas Plants	Banks
Ada County																					
Boise	24,500	33	28	9	127	60	24	141	76	261	84	46	15	30	9	2	3	1	2	3	6
Meridian	700	3	3	2	15	3	1	1	5	6	4	2	4	6	2	1	6	1	1	2	1
Star	500	3	4	1	5	2	0	0	1	3	1	0	1	2	1	1	0	0	0	1	1
Eagle	150	1	1	1	3	1	0	0	1	3	1	1	1	2	1	0	0	0	0	0	1
Adams County																					
Council	600	2	2	1	4	2	1	5	1	5	1	0	1	2	2	1	0	0	0	0	1
Meadows	250	1	1	1	3	1	0	1	1	3	1	0	0	2	2	1	0	0	0	1	1
New Meadows	250	1	1	1	3	2	0	0	1	8	1	4	2	1	3	1	1	0	0	0	1
Bannock County																					
Pocatello	11,000	9	11	8	60	13	7	17	20	165	55	35	10	21	7	2	8	0	1	2	5
McCammon	350	3	2	1	6	1	0	0	1	6	3	5	2	2	1	1	0	1	1	1	1
Soda Springs	750	2	2	1	6	2	2	1	3	5	2	2	2	2	2	1	0	0	1	1	1
Bancroft	250	1	1	1	2	1	0	1	1	6	1	2	1	2	1	1	1	1	0	0	1
Downey	500	2	1	1	4	1	1	2	3	20	8	5	3	4	2	1	4	0	1	0	1
Bear Lake County																					
Paris	1,200	2		2	18	3	1	2	2	6	3	6	2	1	1	1	2	1	1	1	1
Montpelier	2,000	6	6	3	14	4	3	4	7	4	2	6	2	4	2	1	1	1	1		2
Bingham County																					
Blackfoot	3,500	5	3	3	27	5	2	8	10	25	8	8	4	3	2	2	2	1	1	1	2
Shelley	600	4		1	8	2	0	1	2	4	2	2	2	2	2	1	2	1	1	1	1
Aberdeen	250	4	3	1	3	1	0	0	1	14	2	3	2	3	2	1	1	0	1	0	1
Blaine County																					
Hailey	1,500	4	4	2	15	4	2	12	7	18	4	10	10	4	1	2	12	0	2	1	1
Bellevue	720	4	1	1	5	1	1	0	2	5	3	1	1	2	2	1	1	0	1	2	1
Soldier	300	2	2	1	4	2	1	2	2	16	3	4	1	2	3	1	4	0	0	2	1
Arco	300	2	2	1	4	1	1	0	2	5	1	0	1	2	2	1	1	0	0	0	1
Boise County																					
Idaho City	265	1	1	1	2	0	0	2	1	1		0	0	1	2	1	0	0	1	1	1
Placerville	350	1	1	1	3	1	0	0	1	3	1	1	0	1	1	0	0	0	0	0	0
Van Wyck	250	1	1	1	2	1	1	0	1	2	1	1	1	1	1	1	0	0	0	0	0
Roseberry	250	2	1	1	3	1	0	2	1	3	2	2	1	2	1	1	0	1	0	0	1
Bonner County																					
Sandpoint	3,000	7	7	4	25	7	3	12	14	30	10	10	5	4	5	2	1	0	1	1	2
Bonners Ferry	1,500	5	5	1	6	2	1	3	5	12	5	5	3	3	2	1	0	0	1	1	2
Clark Fork	600	2													1	1					1
Bonneville County																					
Idaho Falls	5,000	9	8	5	46	8	6	15	20	50	10	13	8	6	2	4	15	3	1	2	4
Canyon County																					
Caldwell	3,800	7	7	3	27	9	5	15	10	40	10	7	5	6	2	3	2	1	1	1	4
Nampa	4,200	12	10	2	31	8	4	6	14	20	10	8	4	12	7	2	3	1	1	1	3
Payette	3,000	11	11	3	27	6	3	5	6	7	4	3	4	3	3	2	2	2	1	1	3
Emmett	2,000	7	7	4	23	4	1	4	3	15	5	5	2	4	1	2	3	0	1	1	2
Middleton	500	2	2	1	8	1	1	0	1	5	4	2	1	2	1	1	1	0	0	1	1
Parma	500	2	2	1	6	4	1	1	4	8	3	3	2	5	2	2	5	0	1	1	1
New Plymouth	200	4	4	1	6	1	1	1	1	5	2	1	1	1	1	1	0	0	0	0	1

Professional, Industrial and Commercial Statistics of the Principal Towns of Idaho—(Continued).

City or Town	Population	Churches	Ministers	Public Schools	Teachers	Physicians	Dentists	Lawyers	Barbers	Carpenters	Painters and Paper-hangers	Bricklayers and Masons	Plasterers	Blacksmiths	Hotels	Newspapers	Elevators & Warehouses	Flour and Grist Mills	Waterworks	Elec. Light & Gas Plants	Banks
Cassia County																					
Albion	600																				
Oakley	1,300																				
Burley	1,400																				
Clearwater County																					
Orofino	750																				
Elk River	1,200																				
Custer County																					
Challis	425																				
Mackay	1,000																				
Elmore County																					
Mountainhome	2,200																				
Glenns Ferry	1,000																				
Fremont County																					
St. Anthony	2,500																				
Rexburg	2,800																				
Sugar City	800																				
Ashton	700																				
Rigby	600																				
Driggs	450																				
Idaho County																					
Grangeville	2,500																				
Cottonwood	700																				
Whitebird	350																				
Kooskia	600																				
Elk City	250																				
Stites	400																				
Kootenai County																					
Coeur d'Alene	8,000																				
Rathdrum	1,000																				
Harrison	1,000																				
Spirit Lake	1,000																				
St. Maries	1,600																				
Post Falls	750																				
Latah County																					
Moscow	5,000																				
Troy	700																				
Juliaetta	500																				
Genesee	800																				
Potlatch	1,000																				
Kendrick	600																				
Deary	225																				
Lemhi County																					
Salmon	1,500	5	4	2	13	4	2	8	6	6	2	5	1	6	3	2	0	1	1	1	2
Leadore	350	1	1	1	2	1	0	1	1	2	0	0	0	1	3	1	1	0	0	0	1

Professional, Industrial and Commercial Statistics of the Principal Towns of Idaho—(Concluded).

City or Town	Population	Churches	Ministers	Public Schools	Teachers	Physicians	Dentists	Lawyers	Barbers	Carpenters	Painters and Paper-hangers	Bricklayers and Masons	Plasterers	Blacksmiths	Hotels	Newspapers	Elevators & Warehouses	Flour and Grist Mills	Waterworks	Elec. Light & Gas Plants	Banks
Lincoln County																					
Shoshone	1,500	4	4	2	12	3	1	7	4	6	4	2	3	2	2	2	0	0	1	1	2
Gooding	1,100	6	5	3	18	3	1	5	6	20	5	10	2	3	4	2	1	0	1	1	2
Richfield	300	1	1	1	4	1	0	2	1	4	1	1	1	2	3	1	1	0	1	1	1
Hagerman	500	1	1	1	5	2	0	0	1	5	1	3	1	2	1	1	1	0	1	1	1
Jerome	1,200	1	1	1	12	2	1	4	4	10	3	3	2	2	3	2	1	0	1	1	3
Wendell	400	1	1	1	6	1	1	2	3	12	3	2	2	2	2	1	1	0	1	1	1
Heyburn	400	1	1	1	5	1	0	1	1	5	1	4	1	1	1	1	1	0	1	1	1
Rupert	1,000	5	3	2	10	2	2	3	4	15	4	5	2	4	2	1	0	0	1	1	2
Lewis County																					
Nezperce	1,000	3	3	2	12	3	2	5	5	8	6	2	2	3	2	1	4	1	1	1	2
Vollmer	500	1	1	1	6	1	1	2	1	5	1	2	1	2	3	1	3	0	1	1	1
Kamiah	650	1	1	2	7	2	1	1	2	20	4	4	1	4	1	1	3	0	1	1	2
Ilo	300	1	1	1	5	1	1	1	1	5	1	1	1	3	1	1	2	0	1	1	1
Reubens	300	3	3	1	4	4	1	1	2	2	0	0	0	2	3	1	1	0	1	1	1
Nezperce County																					
Lewiston	7,000	7	8	4	40	16	8	19	20	125	12	20	15	5	7	1	4	1	1	2	4
Southwick	280	1	1	1	4	1	1	0	1	4	3	2	1	2	1	1	0	0	0	0	1
Culdesac	500	2	2	1	6	1	1	2	3					2	2	1	0	0	0	0	1
Peck	300	1	0	1	4	1	1	1	2	2	1	2	0	2	1	1	0	1	1	0	1
Oneida County																					
Malad	1,305	3	1	1	21	4	2	3	5	10	1	3	2	6	2	1	3	1	1	1	2
Preston	2,500	3	3	3	17	5	3	5	6	24	8	12		5	3	1	3	1	1	2	2
American Falls	1,000	3	3	1	10	1	1	3	4	20	4	1	3	6	3	1	3	1	2	1	2
Owyhee County																					
Silver City	500	2	1	2	2	1	1	2	1	2	1	0	0	1	1	1	0	0	1	1	0
Bruneau	248	1	1	1	2	1	0	1	1	3	0	0	0	1	1	1	0	0	0	0	1
Shoshone County																					
Wallace	3,500	7	5	2	18	7	4	12	15	50	15	6	7	7	6	2	0	0	1	1	3
Kellogg	1,500	3	3	2	15	3	3	1	6	73	6	4	3	3	3	2	0	0	0	1	2
Wardner	1,400	3	3	1	8	3	1	0	3	1	3	1	1	2	4	1	0	0	1	1	1
Burke	1,000	2	2	2	10	2	0	0	2	7	3	1	1	2	1	1	0	0	1	1	0
Mullan	2,200	3	3	2	14	2	1	1	6	30	3	2	1	4	6	1	0	0	1	1	1
Twin Falls County																					
Twin Falls	8,500	11	11	3	50	10	7	26	15	50	10	8	15	10	4	3	8	1	1	1	3
Buhl	1,200	3	3	2	10	6	2	3	4	20	5	3	2	3	3	1	4	1	1	1	2
Filer	400	2	2	1	6	2	1	1	2	4	2	3	1	2	1	1	2	0	1	0	1
Kimberly	250	2	2	1	6	1	1	0	1	3	1	1	1	1	1	0	0	0	0	1	1
Milner	200	2	2	1	4	1	0	0	1	2	1	1	1	1	2	0	0	0	0	1	1
Hollister	500	2	2	1	2	2	0	0	1	4	0	2	0	1	2	1	1	0	1	1	1
Washington County																					
Weiser	4,000	7	7	3	26	7	3	11	11	20	8	5	4	10	3	2	5	1	1	1	3
Cambridge	500	4	2	1	6	2	1	3	2	8	2	1	1	3	2	1	2	1	0	0	1
Midvale	150	2	4	2	5	2	0	1	2	5	1	1	1	4	1	1	2	1	0	0	1

Manufacturing

THE MANUFACTURING industries of Idaho have showed an unusually large increase during the past two years. The industry is now considered among the most important in the state. In several sections of Idaho manufacturing is the predominating industry. An inestimable amount of water power is available for manufacturing purposes, the extent of which is only limited by the needs of the people and the capital that is available for investment. Raw materials which are consumed by the large manufacturing plants of the Pacific coast cities and of eastern cities, form the most important export of Idaho. Much of this material could well be manufactured within the state and distributed throughout the intermountain territory, thereby saving freight charges both in shipping out the raw material and the importation of the finished article.

LUMBERING.

The lumbering industry, both in respect to the value of the products and the number of persons engaged in the industry, is the most important manufacture of the state. Lumbering is the leading industry in Bonner and Kootenai counties, while at Potlatch, in Latah county, is located the largest lumber mill in the world. The plants give employment to thousands of men throughout the year. Lumbering, however, is more or less of a seasonable industry. The largest number of persons are employed in June, while the minimum of employment is in January.

MILLING.

Flour and grist mill products, which consist largely of flour, are in respect to value, of second importance among the manufactures of Idaho. There is scarcely a community, especially in the agricultural regions, where a flouring mill does not exist. Not only is the local trade furnished by these mills, but large quantities of flour are shipped regularly to places outside the state. Utah consumes much Idaho flour, while many cars are shipped annually to California, Oregon, Wyoming, Colorado, Nevada, Montana, Texas and to states in the lower Mississippi valley.

PRINTING AND PUBLISHING.

There is a large printing and publishing business in Idaho. It is greatly in advance of the business in many other states which are much older in point of development.

There has been a pronounced growth in the newspaper and periodical branch during the past few years. A total of 155 newspapers and periodicals are published in the state, while in 1904 there were 95, and only 73 in 1899. Of the total number, 11 are daily newspapers, 3 Sunday, 5 semi-weekly, 133 weekly and 3 are monthly publications. All are published in the English language. Politically these publications represent every phase of public opinion. They are evenly distributed throughout the entire state.

DAIRY PRODUCTS.

The making of butter, cheese and condensed milk is growing rapidly. There are 36 establishments in the state manufacturing dairy products, while large quantities of cream are shipped to factories outside of the state. The creameries are at present unable to supply the demands of the people of Idaho for butter and cheese. There are wonderful opportunities for the operation of more creameries.

Railroad cars and general shop construction gives employment to nearly 1,000 men. The manufacture of beet sugar is one of the more recently established manufactures of the state. Plants are located at Burley, Blackfoot, Idaho Falls, Sugar City and Nampa. The Nampa plant did not operate in 1912. Large numbers of persons are given employment at these plants. Sugar to the value of $2,182,500 was produced in 1912. Other important manufactures of the state were malt liquor, brick and tile, bakery and confectionery products, and canned and evaporated fruit.

Meat packing is an important phase of the manufacturing industry that must be developed in Idaho. There are only five slaughtering and meat packing establishments in the state that do a wholesale business of any importance. Thousands of

STATISTICS OF IDAHO MANUFACTURES—1912.

Kind of Manufacture	Number of Establishments	Capital Invested	Number of Proprietors and Frm Members	Number of Employes		Total Number Persons Engaged in Industry	Total Salaries and Wages for Year		Average No. Hours Worked per Day	Average No. Days Worked per Year	Total Value of Products 1912
				Male	Female		Male Employes	Female Employes			
Saw and planing mill products (1)	274	$18,123,808	360	6,553	49	6,962	$4,391,000	$20,525	10.	238	$11,346,000
Flour and grist mill products	57	2,244,848	58	292	....	350	306,016	.....	9.	295	2,994,848
Sugar manufactures	5	5,300,000	2	653	....	655	179,575	.....	24.	100	2,182,500
Butter and cheese (2)	36	756,000	81	180	36	297	132,558	16,146	9.5	299	1,768,129
Printing and publishing	143	1,382,810	271	475	80	826	489,428	45,077	9.	312	1,730,689
Cars and repairs by railroads.	5	468,328	.....	960	....	960	696,409	.....	8.	307	1,366,408
Bakery and confectionery products (2)	84	348,816	111	166	102	379	150,356	50,667	10.5	333	774,507
Slaughtering and meat packing (3)	5	428,999	8	60	2	70	53;208	1,600	10.	307	664,625
Brick and tile	36	800,137	40	429	....	469	139,425	.....	8.	100	487,985
Liquors, malt	9	1,006,911	9	83	....	92	83,000	.....	8.	307	417,150
Founderies and machine shops	14	276,753	15	87	....	102	83,941	.....	10.	307	228,469
Fruit canning (2)	6	63,600	6	73	153	232	15,768	25,707	12.	96	193,000
Tobacco manufactures	24	74,753	25	73	29	127	93,951	12,856	8.	286	187,803
Ice, manufactured	9	424,341	18	30	....	48	25,200	.....	10.	280	145,863
Total	707	$31,700,104	1,004	10,114	451	11,569	$6,839,835	$172,578			$24,487,976

(1)—Does not include detached planing mills doing custom work.
(2)—Includes commercial plants only.
(3)—Plants operating under government supervision.

carloads of cattle, sheep and hogs are annually shipped to Pacific coast, Spokane and eastern markets, where they are slaughtered. The meat is cured and much of it is returned to Idaho.

CEREAL MILLS.

Although Idaho produced over 15,000,000 bushels of oats during 1912 and her people consume large amounts of oat products, there is not a cereal roller mill within the state. Splendid openings await the installation of cereal mills. Conditions are most favorable, the raw materials are near at hand, cheap power is awaiting use, and a ready market exists within the state and in the surrounding states for the finished products.

Excellent materials for brick and tile are found in many parts of Idaho. Thirty-six establishments are in operation which manufactured over $487,000 worth of products out of the earth during 1912. The most important plants are located at Sandpoint, Heyburn, Pocatello and Boise. Thousands of brick are now shipped into the state.

Although Idaho produces much canned fruit, hundreds of carloads are imported annually. Six commercial canning plants in the state prepare peaches, pears, plums, apricots, apples, cherries and berries in large quantities. Peas and other vegetables are also canned. Importations of canned goods consist of meats, milk, vegetables and fruits. The commercial canning plants of the state are located in the Boise, Payette and Weiser valleys, and at Lewiston.

MANY MANUFACTURING OPPORTUNITIES.

Manufacturing in Idaho keeps pace with the rapid strides toward advancement in agriculture, which is of prime necessity to manufacturing. The mines of Idaho first brought the attention of the people of the United States and of the world to the territory. Thousands of persons were lured to the rich mining fields. Agriculture followed, in order to supply the wants of the miner, and, after a certain amount of agricultural development, the people keenly felt the necessity for manufacturing establishments to supply the needs of a growing commerce. Agriculture soon expanded to such an extent that the miners were fed, and there has been, for many years, an abundance of many food products with which to feed not only the people of the state, but of the outside world. Still local manufacturing is able to supply only a very small portion of the necessary articles required by the people of the state.

WOOLEN MILLS NEEDED.

The entire wool clip, which amounts to 22,275,000 pounds annually, is shipped from the state to be manufactured, and every article of clothing needed in Idaho is imported.

The power for the operation of the manufacturing plants of Idaho comes from four sources, steam, gasoline, water wheels and electricity. Steam power is used in 46.6 per cent of the manufacturing establishments, while electrcity furnishes the power in 42.4 per cent of the plants. Gasoline is used in 5.6 per cent of the factories, and 5.4 per cent are run by water wheels or water motors. The large amount of steam operated plants is accounted for chiefly by the many lumber mills in the northern part of the state, as well as elsewhere in the timber belt. In those districts lumber waste can be economically used for fuel. The streams of the state have been appropriated in many instances to turn the wheels of industry. Great hydro-electric power plants have been installed in many of the waterways. Electric power is carried from the power plants by transmission lines to many distant places, where the electricity is used for manufacturing, motive power and lighting.

The carefully regulated hours of labor and the almost total absence of children employees in Idaho manufacturing establishments is a commendable feature in respect to the industry in the state. In the entire state, during the year 1912, only 35 children under the age of 16 years were employed in the factories. Most of them were employed in the printing and publishing business. The majority of the female wage earners are engaged in bakery goods and confectionery manufactures.

The appended statistics on manufactures were compiled primarily for the purpose of showing the relative magnitude of the different branches of the more important industries of the state. Incidentally the effort is made to present data furnishing information upon the character of organization, size of establishments, labor force, and other subjects. The statistics of manufactures of Idaho are confined exclusively to manufacturing establishments conducted under the factory system, as distinguished from the neighborhood, hand, and building industries, or those manufactures the value of which, for the year 1912, was less than $500.00 per establishment. The term "establishment" as used in the statistics, comprises the factories, mills or plants that are under a common ownership or control, and for which one set of books or accounts are kept.

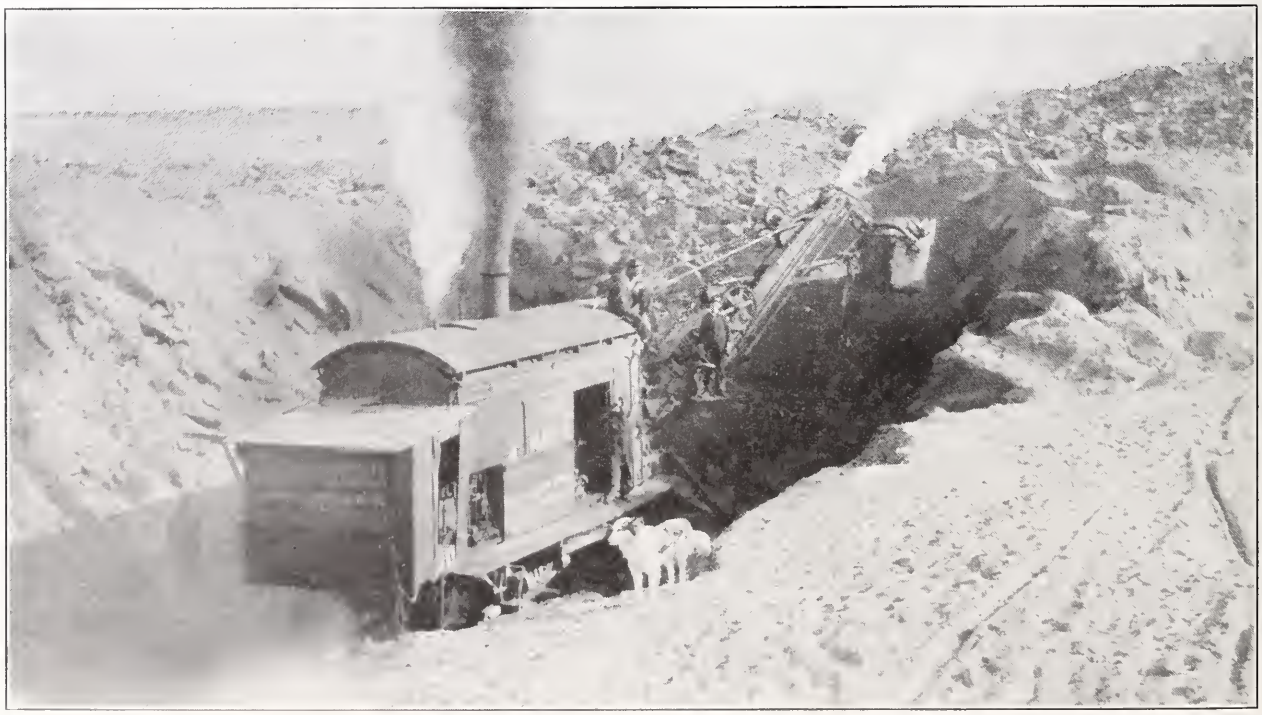
Celilo Canal

The opening of the Celilo Canal in the Columbia river January 1, 1915, will mark an extremely important event for the entire northwest. For years there has been a considerable volume of traffic upon the Columbia and Snake rivers, as far inland as Lewiston, Idaho. On account of a series of rapids in the Columbia, it has been necessary to transfer shipments, using railway transportation for a distance of nine miles around the rapids near The Dalles, Oregon.

The object of the canal is to overcome natural obstructions in the Columbia river. Plans for the canal and locks were adopted by congress in 1902, providing for a canal 8½ miles in length, having a width of 65 feet and a depth of 8 feet at low water. The fall in the river paralleling the canal and locks that will be constructed amounts to 81 feet at low water. There will be five locks in all. Two will have a lift of 35 feet each. In addition to these locks there will be two tandem locks that will form a part of the canal, for use during the low water stage. The excavation for the lower lock chamber for the tandem lock at Bay Eddy has a depth of 76 feet. The upper chamber excavation will have a depth of 40 feet. The lock gates will be constructed of steel. The lower gate in the tandem locks will be 50 feet high. Each of the lower lock chambers will be 40 feet wide and 300 feet long, ample for any class of steamer that will navigate the stream. The construction of the canal will require the removal of 1,300,000 cubic yards of solid rock, the removal of 1,500,000 cubic yards of sand and gravel and will require the placing of 114,000 cubic yards of concrete masonry, as well as 99,000 cubic yards of canal lining in addition to 2,800,000 tons of metal work and machinery.

The canal was blasted through solid rock part of the distance, therefore retaining walls are needed only one-half of the distance. The estimated cost of the work was $7,000,000 and the present indications are that the cost will not exceed this figure. It is estimated that it will require about two hours and fifty minutes for a boat to pass through the canal.

The opening of the Panama canal has an economic significance to all the world. The opening of the Celilo canal, which will be simultaneous with the opening of the Panama canal, has also a world wide significance when it is remem-



STEAM SHOVEL EXCAVATING FOR THE CELILO CANAL.

Average freight charges per bushel for transportation of Wheat and Corn from Chicago to New York for a series of years.

	CORN			WHEAT		
	Lake & Canal	Lake & Rail	By All Rail	Lake & Canal	Lake & Rail	By All Rail
1872	.107	.266	.326	.111	.295	.349
1873	.081	.229	.289	.091	.246	.310
1874	.038	.138	.245	.040	.170	.262
1875	.034	.130	.224	.037	.138	.240
1876	.087	.107	.157	.098	.113	.168
1877	.095	.140	.189	.110	.154	.205
1878	.088	.105	.165	.099	.120	.177
1879	.104	.122	.145	.118	.131	.177
1880	.134	.144	.174	.131	.158	.198
1881	.077	.094	.134	.086	.104	.144
1882	.067	.102	.135	.072	.109	.144
1883	.080	.110	.151	.090	.116	.162
1884	.065	.085	.123	.070	.100	.132
1885	.063	.080	.123	.065	.090	.132
1886	.084	.112	.140	.091	.120	.150
1887	.085	.112	.147	.095	.120	.157
1888	.067	.102	.135	.070	.111	.145
1889	.063	.081	.126	.069	.089	.150
1890	.059	.073	.113	.067	.085	.143
1891	.063	.075	.140	.069	.085	.150
1892	.059	.072	.129	.064	.075	.138
1893	.718	.079	.136	.076	.084	.146
1894	.049	.065	.123	.051	.070	.132
1895	.045	.064	.102	.048	.069	.118
1896	.057	.061	.105	.061	.066	.120
1897	.045	.069	.114	.052	.074	.125
1898	.038	.044	.098	.044	.049	.120
1899	.050	.058	.100	.058	.066	.116
1900	.040	.047	.091	.044	.051	.099
1901	.046	.051	.092	.051	.055	.098
1902	.048	.055	.099	.052	.058	.106
1903	.048	.057	.105	.054	.063	.112
1904	.036	.048	.103	.047	.055	.111
1905	.047	.051	.094	.055	.064	.099
1906	.055	.057	.095	.060	.063	.102
1907	.061	.062	.101	.066	.070	.109
1908	.056	.067	.098	.060	.066	.106
1909	.048	.058	.093	.052	.064	.099
1910	.045	.057	.082	.049	.065	.088
1911	.048	.052	.089	.052	.053	.096

BATTERY OF POWERFUL DERRICKS ON CELILO CANAL.

bered that nearly one-half of all of the wheat and flour that is exported from the United States passes through the gateways of Portland and Puget Sound export ports. The greater part of this export surplus comes from the interior districts that will be served by this great artery of commerce, the Columbia and Snake rivers, which has now two splendid railways systems, one on each bank, a great part of the distance. There were four splendid railway systems operating between Chicago and New York city when the Erie canal established an all water route between those cities.

The appended table shows a constant reduction in rates, which, with corn, was reduced from 32 cents per bushel to 8 cents per bushel and the all-water rate to .048 cents. The amount of steel laid for railway service between those cities has been more than trebled during the period of this reduction.

The reduced rate on grain and other commodities furnished a wonderful impetus that greatly aided in developing the greatest agricultural empire in all the world, which in turn developed the world's greatest grain and provision market at Chicago.

The far west and northwest of the United States is the one district that may be expected to supply a surplus crop of wheat and oats to feed the under-supplied eastern states and the insistent markets of the "near-east," commonly known as the Orient.

The opening of water traffic with a consequent lowering of freight rates will cause many millions of acres of now undeveloped land to yield annual and abundant crops to meet the demands of the world's markets. There are good reasons why the great inter-mountain districts should share a development in many ways analogous to the great middle west when water transportation became available.

With the vast quantities of electrical energy now being generated from the natural streams of the intermountain country, which will be used for manufacturing purposes, a large portion of export bread stuff will move in the form of flour. Bran, shorts, and other forms of mill products will be retained upon the intermountain farms to develop the live stock industry and aid in making permanent a well balanced and diversified class of farming.

Many other products, including lumber, fruits and vegetables—particularly canned products, will reach all parts of the world through improved transportation service.

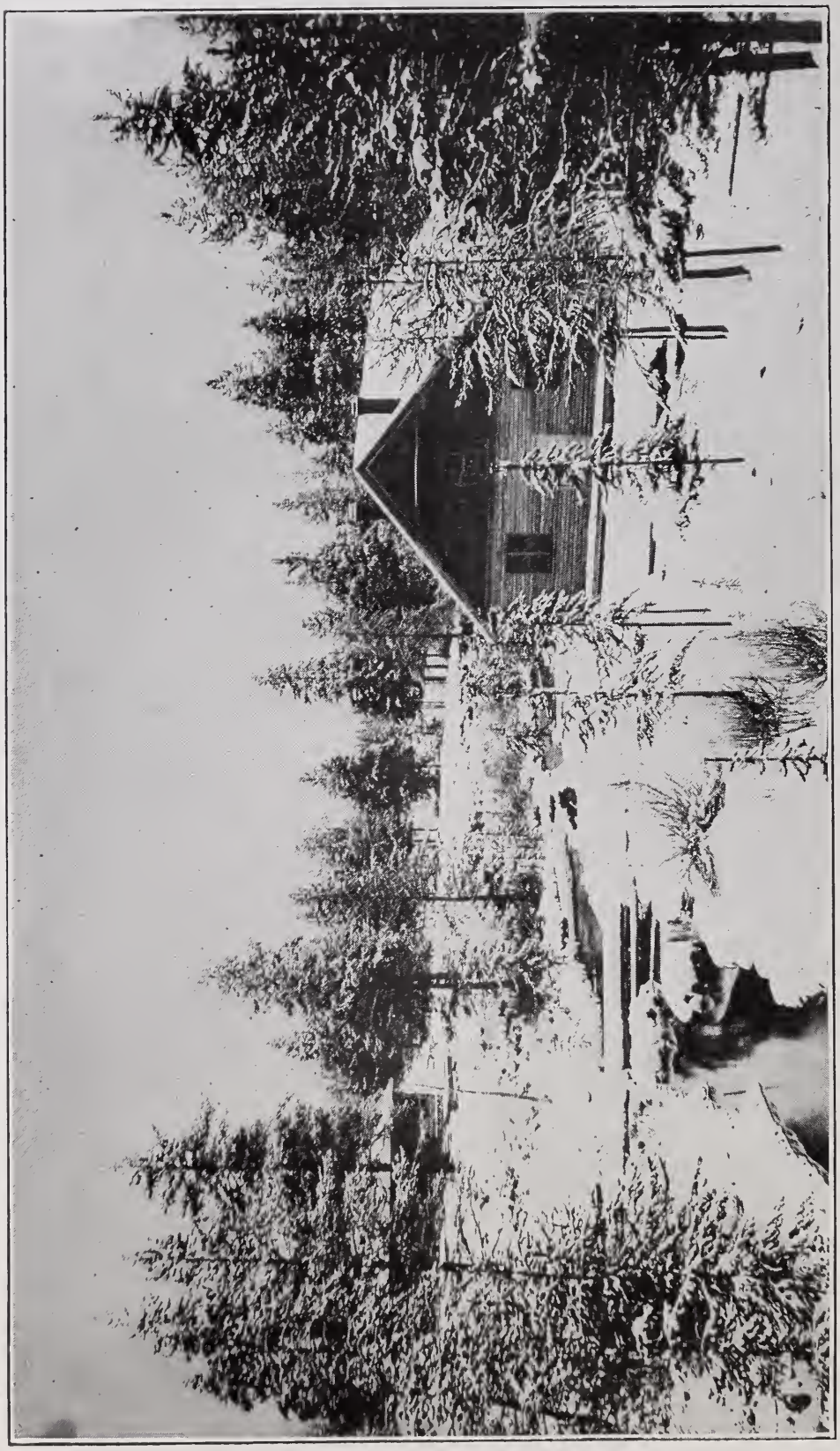
The opening of the Celilo canal may not greatly increase the size of the loaf of bread to the consuming public, but it will bring the "near-east" closer to the "far-west" in the development of a wonderful commerce and it will enable the "middle-west" to establish relations with a seaport 466 miles nearer than has been possible in the past.

ROCK CRUSHER AND CEMENT MIXER ON THE CELILO CANAL.

SECTION OF THE FINISHED CANAL.

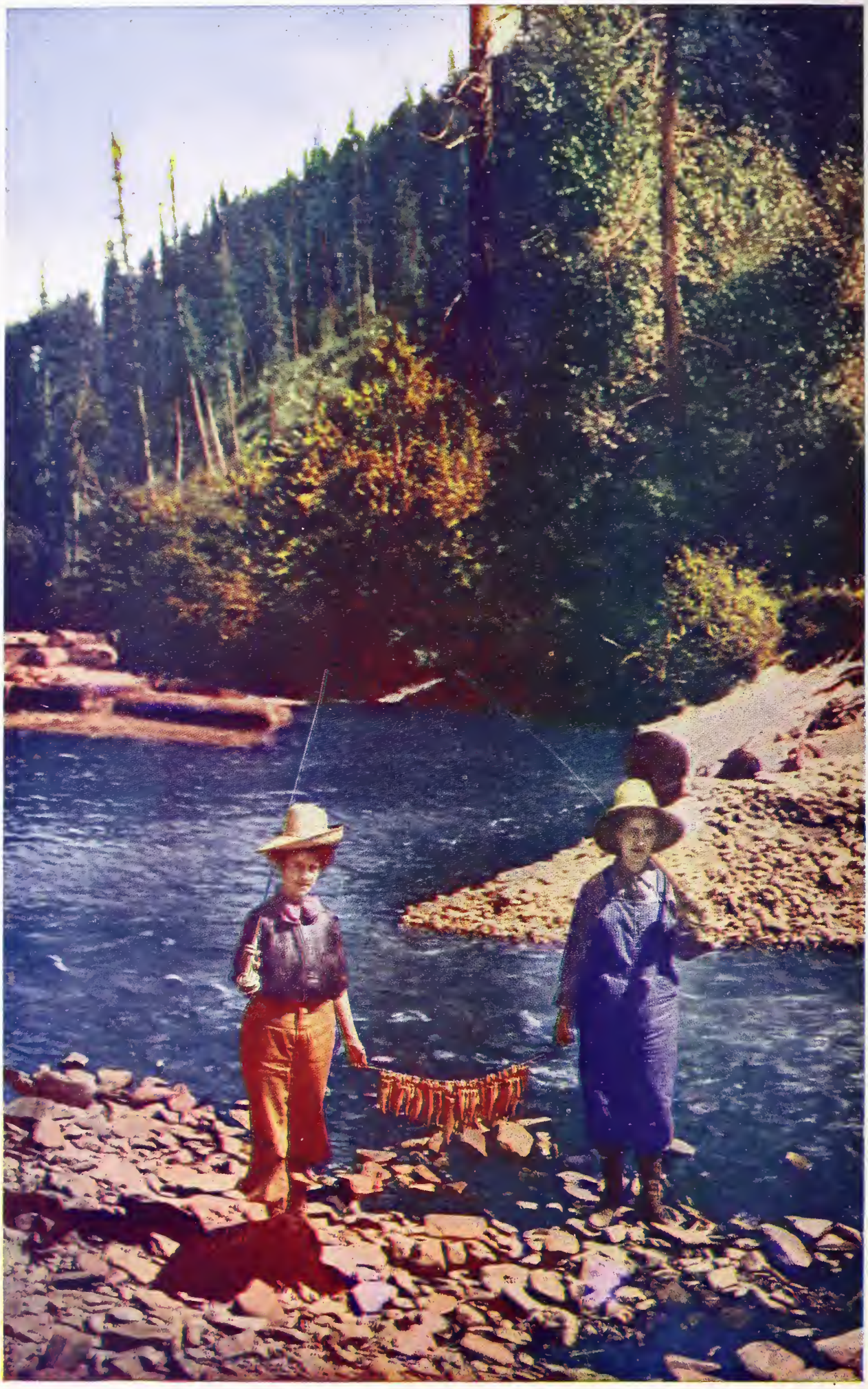
IDAHO, THE "GROWINGEST" STATE IN THE UNION.

Railway extensions are largely responsible for rapid growth and development. During the past several years there has not been a month in the year that active construction work was not in progress upon of the railway extensions in the state of Idaho and not infrequently has there been four important extensions under construction at the same time.



WARM RIVER STATE FISH HATCHERY.

The Warm River State Fish Hatchery is situated near the headwaters of the Snake River adjacent to the Yellowstone National Park. It is located within a 12,080 acre game reserve. Near by flows the Warm River, but it is not shown in the above photograph. This stream is one of the famous trout streams of the state. Warm River is tributary to the Snake river. The hatchery building is constructed of logs and is 40x80 feet in size. The altitude is 6,000 feet. The temperature of the water is about 42 degrees the year round. Here the young fry of our native trout and the eastern brook trout are hatched and later distributed in the lakes and streams throughout the state.



VACATION.

"See America First" —Begin with Idaho.

Pleasure and Health Resorts

JAMES C. LEWIS.

WHEN one speaks or reads of mountain pleasure resorts, there is brought before the mind a vision of the winding trail, leading on and on over hill and through forest, away from mere people, into Nature's Sanctuary where, by stream, or lake or flowing spring at last the ideal spot is found and the tent is pitched or the rude lodge built. Here then is home, and three small boulders placed to form a triangle do form the family hearth stone. The fire is lighted, and that devotee of highest art, oftimes in vulgar parlance styled the cook, doth show forth all his skill. Delicious odors of the fresh-caught trout done to a turn, mingling with the fragrance of steaming coffee and hot biscuits are wafted to the nostrils, causing the mighty yearning in the inner man. The supper spreads forth her mantle inviting to repose. The stars appear and spin a million slender threads of silver light. A last long draught from the bubbling spring shows every star a dancing gem within its crystal depths. The camp-fire burns now bright, now dim, throwing into bold relief the tree trunks, and the solitude in its little circle in the solitude. Birds gone to their complaint in querulous twittering phantom through the lighted circle and is gone on silent wings into the night.

The fire burns low, unwonted drowsiness steals on apace, the bed of fragrant boughs receives the weary body, and the evening [illegible] more acute, stands before had passed.

A ceaseless roar near; anon, A waterfall, coming day. A feathery branch far up the o'er the cliff; the rocks

Rustlings movements

Consciousness almost spent;

'Tis morning the sleeper's face like a log.

A vision of And further, of

equipped bursting

are large, are sulphur mountainside draws

Heise from Idaho excellent

The Lava Hot Springs are on Portneuf River near Pocatello. These springs are included within a land grant comprising 187.30 acres made by the United States to the state of Idaho. Being held by the state for the free use and benefit of the people, these springs are a "mecca" for campers during the summer season.

Hot or warm springs are found in almost all parts of Idaho. Many theories have been advanced to account for the fact that in parts of the world hot water issues from the earth. One theory asserts that waters passing through regions where chemical action is violent are often heated and emerge on the surface of the earth as hot springs. Another theory would make the sources of hot springs so deep as to take their temperature from the earth's internal heat.

But Idaho's hot springs may come from a different cause. Ages ago, this inter-mountain country was vastly different in its physical features from what it appears

I am sitting today at the desk alone,
And the figures are hard to tame;
I'd like to shift to a mossy stone
Nor bother with pelf and fame.
I know a pool where the waters cool
Rest under the brawling falls,
And the song and gleam of that mountain stream
Oh, it calls, and calls, and calls!

There are hooks and lines in a wayward store
Where the ranchers buy their socks,
And the miners get their powder and fuse
And the pretty girls buy their frocks.
I wonder how long that tackle will lie
As useless as an empty spool,
Unless I happen along to buy,
And sneak for that mountain pool.

Oh, bother the flies, I guess I've enough,
I know where the worms are thick;
By Billy's old barn—Oh, they are the stuff—
You can dig a quart with a stick.
The reel is all right and the line is tight,
And if they should happen to fail,
There's little birch rods that are fit for gods
When they follow the trout-brook trail.

I jing! The demon has rung me up—
The "central" up in the woods—
Waders, and creel, and a pocket cup!
I'm after the only goods.
Wire for Hank and the old buckboard—
The secret, I guess, is out—
Dont' bother me now—you'll get in a row—
I'm catching a train for trout!

—Selected.

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The fire burns low; unwonted drowsiness steals on apace, the bed of fragrant boughs receives the weary body, and the eyelids close. But now the sense of hearing, more acute, stands sentinel and conveys to waning consciousness impressions that before had passed unheeded.

A ceaseless roaring beats upon the ears, now swelling to great volume it seems near; anon, receding to great distance, only a gentle murmur breaks the stillness. A waterfall, unheard before—the joy of exploration and discovery awaits the coming day. A mouse rustles the leaves piled 'gainst a fallen tree trunk. A feathery branch stirred by the wind brushes the tent-side ever so lightly. From far up the mountainside a dead branch crackles suddenly and plunges downward o'er the cliff; but consciousness has lapsed before the crash, five seconds later upon the rocks hundreds of feet below, recalls the mind to things of earth.

Rustlings here and there, far calls, and sounds half heard, are tokens of the movements of the forest folk.

Consciousness lapses and returns like the coming and the going light of a candle almost spent; and deep sleep comes.

'Tis morning, and the sun bursting from behind yon cliff smites heavily upon the sleeper's face and bids him wake. Of sleep he's had a full ten hours—slept like a log. And hungry! Let the cook get busy.

A vision of an outing such as this could be realized in countless parts of Idaho. And further, if there are those who care more for their kind than for the charms of nature, such will find ideal resorts for pleasure or for health, with hotels well equipped, athletic fields and tennis courts, and baths supplied with medicated water bursting from the mountainside, hot from nature's laboratory.

There are the Hot Springs on the shores of Bear Lake near Montpelier. Here are large, commodious baths and a hotel modern in all its features. The waters are sulphur and have a temperature of 120 degrees as they issue from the mountainside. The scenic beauty of this resort as well as the virtue of its waters draws many visitors each year.

Heise Hot Springs on the South Fork of the Snake River within easy reach from Idaho Falls or Rexburg offers ideal bathing features, first class hotel and excellent boating and fishing.

The Lava Hot Springs are on Portneuf River near Pocatello. These springs are included within a land grant comprising 187.30 acres made by the United States to the state of Idaho. Being held by the state for the free use and benefit of the people, these springs are a "mecca" for campers during the summer season.

Hot or warm springs are found in almost all parts of Idaho. Many theories have been advanced to account for the fact that in parts of the world hot water issues from the earth. One theory asserts that waters passing through regions where chemical action is violent are often heated and emerge on the surface of the earth as hot springs. Another theory would make the sources of hot springs so deep as to take their temperature from the earth's internal heat.

But Idaho's hot springs may come from a different cause. Ages ago, this inter-mountain country was vastly different in its physical features from what it appears

today. Then came one of the greatest outbursts of volcanic force of which there is geological proof. An ocean of molten lava engulfed the hills; plains were covered, valleys were filled to the brim, and rivers and streams blotted out. When the cataclysm had ceased new mountains had appeared and all around the red hot lake of lava hissed and writhed and rumbled, and anon exploded from the force of pent-up gases. As ages came and went the surface of the earth became more cool, and moisture fell, trickling here and there among the cooling rocks and ashes, gathered into mighty lakes, and later, searching here and there, drawn by the magnet of the sea, broke out an opening and escaped to mingle with the ocean. And while this process, carried on through ages, has changed the surface of what was once hot lava and volcanic ash to be a most productive soil, yet there remains today sufficient heat within the limits of this lava flow to raise the percolating waters to high temperature before they issue forth as hot springs from the bases of the hills and mountains.

One of the most beautiful bodies of water in the whole northwest is Bear Lake in southeastern Idaho. This great body of water, twenty-two miles long and eight miles wide, extends across the southern border into Utah. Its location and environment make it the natural home of water fowl of every kind. Its waters teem with fish, indigenous to Idaho waters, and in addition, two distinct species of trout are found. The lake is easily accessible to tourists, and its waters are covered with pleasure craft during the outing season.

Situated on the main line of the Oregon Short Line Railway in Bannock county is Soda Springs, probably Idaho's best known pleasure and health resort. Their waters, heavily charged with carbonic acid gas, burst from the earth as if they boiled, but they are ice-cold. These waters are of great value, and are bottled and find a wide market under the name, "Idan-ha Water." Because of their accessibility thousands visit these springs each year. A large hotel, the Idan-ha, accommodates the traveler.

The headwaters of the great Snake river have their source in Yellowstone National Park, and it is a fact worthy of note that this playground of the nation lies partly within the borders of our state. Each year three great transcontinental railways send their tourists to the Yellowstone by way of Pocatello, the eastern gate of the state of Idaho.

It would not be possible within space limits to make adequate mention of the numerous lakes, streams and springs, where the tourist may find hotels and establishments providing for every comfort. Neither would it be possible (for words are inadequate) to describe the wonderful grandeur, awfulness and sublimity of our mountain scenery. Recently, a gentleman speaking of the natural attractions of Idaho said: "I have scaled the Alps, and sailed the crystal waters of the lakes of Switzerland; climbed through hot ashes to the crater's rim and viewed the mighty

WHERE THE GAMEY TROUT ARE CAPTURED.

power of grim Vesuvius; looked on the fertile valley of the Nile with its great monuments of a departed race; lived through a raging hurricane; beheld the wonders of a waterspout upon the ocean; survived a storm at sea—yet all these things are not more wonderful than are the scenic wonders of this state."

One of a party of railway magnates declared after a visit to beautiful Payette Lake in west central Idaho last summer: "It is more beautiful, more attractive in all its features, than Lake Tahoe." Another traveler returning from a sojourn at this lake, exclaimed: "Killarney, Como, or Geneva have no more beautiful setting than has Payette Lake. Most appropriately has it been termed 'The Gem of the Mountains.'"

Such expressions coming from those qualified to speak are worthy of consideration by the tourist or health-seeker. Lying at an elevation of about one mile Payette Lake has a circumference of about thirty miles. Near the center, the hills crowd in as if to cut the lake in twain, and at this point occurs the greatest depth, as yet unmeasured, but known to exceed 2,000 feet. A gentle surf beats on the shore, curling and feathering over the pure white sand. Sheer from the water's edge rise giant trees of cedar, spruce and pine, spreading aloft their dark green plumes, their fragrance permeating all the air. From the farther shore these forest monarchs reflected from the mirrored surface of the lake appear, point downward, in the liquid depths. Above the sparkling surface birds wing their way from shore to shore. Water fowl circle, till weary of wing ,they settle on the lake's cool bosom where, rocked by the gentle waves, they rest. Beneath, myriads of fish of rainbow tint dart swift as arrows through the water, while far above an eagle circles on strong wings, a tiny speck in the azure blue.

When at the close of day the sun drops down behind the western mountains and shadows creep across the valley and ascend the eastern range the glories of the sunset cast their spell o'er the beholder like enchantment. Magic colors blend in perfect harmony, producing matchless shades and tints delightful to the eye, and filling the soul with wonder. At last the colors fade; and, as the shades of night draw down, the watcher turns filled with the thought that the mountain sunsets of fair Idaho are rivaled only by the sunsets of the tropics in their splendor.

Should one desire new beauties let him travel farther north and pause among the lakes of Cœur d'Alene or sail a boat on broad Lake Pend d'Oreille or Priest Lake. Would he take an excursion? Let him board a steamer on St. Joe River—the beautiful—and see the wonders brought to view at every turn. Is he a devotee of the rod and gun? Then let him lay his course along the valley of the great Salmon River where game of all descriptions find a feeding ground, and huge salmon fish, from which the river takes its name, come up from the Columbia in great schools to spawn. Would he be filled with awe? Let him turn southward and journey to the great Shoshone Falls where the waters of the mighty Snake plunge downward more than two hundred feet with terrible thunderings called by the Red Man "Voice of Manitou." Would he reach the sublime? Then let him gird his loins and with the heart to meet and laugh at hardship, with courage to encounter danger, and with will to persevere—let him explore the lofty Sawtooth mountains and hunt out their secrets. Here the icy waters may yield up of fish a distinct species; strange animals and birds are found, and Alpine flora greets the eye. If he has hardihood to scale some lofty peak, and from his vantage point, suspended, as it were, between the earth and heavens, survey the mighty handiwork of the Creator, his is an achievement worthy of true manhood.

Each year Americans by thousands seek out foreign lands to view their wonders, while greater wonders in their native land remain neglected. 'Tis true there are a few well known resorts within America that claim their share of tourists like the Yellowstone or the Yosemite. The Yellowstone lies on our eastern border, and the thousands who have known its spell may feel they know something of the grandeur and the charm of Idaho.

The veteran fisherman and his twelve-pound catch. People who take time to go fishing and are successful, carry their years lightly.

Idaho Game

IDAHO has been called "The Sportsman's Paradise."

When we consider the abundant animal life to be found on her plains, in the forests, lakes and streams, the title appears eminently appropriate. Nowhere else on the American continent can one find such abundance and such variety of birds, beasts, and fish as in Idaho.

Since the days of Isaac Walton and his classic "The Complete Angler," fishing has been deemed royal sport. Royal sport presupposes the existence of fish and game in reasonable quantities. Game cannot exist in its highest perfection except where natural conditions surround it and are perfectly adapted to its life and growth.

There are thousands of sportsmen now living in the states of the middle west and east who have noted with keen regret the disappearance of practically all game and even fish from their native habitat in those districts. The onward march of civilization has sounded the death-knell for all big game and much of the smaller game. The raging floods that seem to occur with increasing frequency in many parts of the United States of late years are perhaps the most deadly foe of the finny tribe. Streams suddenly rise to many times their normal size and overflow their banks, and receding, leave countless millions of fish in pools and holes to die. Not only the floods, but the torrential force of the water actually washes fish by the thousands out of the upper regions of the streams into the lower lands where conditions are not conducive to their continued life and growth. The washing silt causes a muddy condition of the water, owing to the constant rains in many parts of the humid districts. This helps to destroy much of the fish life.

The mid-summer drouth which often lasts for weeks at a time causes many of the streams to dry up and the fish die by the million.

The sportsman who has shared the disappointments that accompany the conditions above described will welcome the information that the state of Idaho has profited by the dearly learned lessons of some of the older settled portions of the United States.

Nineteen million eight hundred ninety thousand acres, which equal 37% of the total area of Idaho, is contained within the national forests. The conservation of the forests means conservation of all our fish and game. By reason of the protection afforded by the national forests in the mountainous and timbered districts, all of the streams and rivers of the state have their source protected and preserved.

TAKING SPAWN.

Idaho has a spawn-taking station at Big Springs on the headwaters of the north fork of the Snake river in Fremont county. During 1911 and 1912, 6,025,000 eggs were taken here and transferred to the three state fish hatcheries.

Intelligent and well enforced laws promote the development of fish and game life throughout the state. Three large hatcheries that have a capacity to furnish 10,000,000 fish each year are maintained and managed under the direction of the State Fish and Game Department. These millions of fish are distributed in the natural streams and lakes supplementing an already well stocked water.

Waterfowl of all kinds found in the temperate zone are plentiful. The numberless lakes and rivers, large and small, together with the frequent marshes found in the high valleys and plateaus of the central, northern and eastern parts of Idaho, offer ideal breeding and feeding grounds for these birds.

Throughout the plains region and in the foothills game birds of all descriptions are abundant. English, Chinese and Mongolian pheasants have been imported and are increasing at a rapid rate. They are absolutely protected by law at present.

Most of the fur-bearing animals are classed as predatory. The muskrat is abundant in nearly all parts of the state. The skin of this animal is valuable, and each year thousands of dollars worth are taken. The state pays a bounty on each coyote taken; this bounty, together with the value of the skin, brings the trapper from $2.00 to $5.00 for each coyote captured. Many homesteaders supplement their income during the first two or three years by trapping during the winter months.

The hunter with red blood in his veins and who longs for excitement with danger in the chase, can find all of the elements to satisfy him in the more rugged and lofty mountains of the state. Here he may scale well nigh inaccessible peaks on the trail of the mountain sheep and the mountain goat. In the lower altitudes he may try conclusions with the brown bear, the black bear and the silver tip or grizzly bear. In the more remote districts a cougar or even a "bob-cat" may give him diversion; perhaps he may match his wits against the cunning of a timber wolf.

Moose, antelope, caribou and beaver are found in Idaho, but at present they are absolutely protected. "Camera hunting" of these animals is, however, permitted. This is a form of sport deservedly becoming more popular each year.

Deer in abundance are found in many interior parts of the state, and elk are abundant in the Sawtooth mountains, the Yellowstone Park country and the Priest mountain district. These animals may be taken during the open season and the pursuit of them is truly "royal sport."

Idaho's domain offers to the wild things of the land, water, plains and mountains environment that makes for their increase and development.

State licenses issued under the game laws are designed to give to sportsmen every privilege a thorough sportsman would desire, and at the same time properly conserve the wild life within the borders of the state.

CHINESE GOLDEN PHEASANTS.

——even the saw-logs, destined to the mill below, insist upon lingering.

Health Dividends

If Idaho climate could be capitalized and dealt in as an article of merchandise, its real value would exceed the value of all of our invested capital in banks, merchandise, business blocks, farms and live stock. Idaho climate declares its dividends in the form of red blood and rosy cheeks and bright eyes, and an elastic step that indicates energy and a purpose in life that is as sterling as gold.

The men do not have a monopoly of the sports in Idaho. The women are equally as successful as the men in locating the best fishing streams and lakes and equally as skillful in capturing the elusive trout and bass. A vacation amid such surroundings prolongs life and adds a delightful zest to the routine duties during the weeks that follow.

The sun is warm during the day. The high mountain peaks are always covered with snow. Cold air is heavier than warm air. When the afternoon sun's rays begin to decline, the cool air from the snow-capped mountains settles to the valleys and sleep is always restful.

In some valleys even during a hot summer day the harvest hands find comfort watching a snow flurry raging among the mountain tops in the distance. It is cooling and comforting to anticipate the pleasures of a fishing excursion on the morrow, where at the end of a day's journey, camp fires will be heaped high and the trout in the frying pan whets the full-grown appetite; where flannels and blankets are a part of the camp regalia; where breezes amid the tall pines harmonize into a grand symphony with the gurgle and swish of the melting snow water in its rumble and tumble down the mountain side toward the dry land of the valleys; where sleep refreshes and invigorates; where the morning sun penetrates a natural hospital not devised by the doctor and the trained nurse; where nature calls out an ambition that is not easily thwarted.

There are thousands of over-worked, run-down, pale-faced, fagged-out victims of insomnia and lassitude who feel that the undertaker is gaining on them in the every-day struggle.

Brace up! Cheer up! Come and share the Idaho health dividends. Proxies don't count. Short installments will help. Protracted participation will cause you to feel that you are a real, live, active, appreciative partner with the Creator who bestowed such wholesome, inspiring, health-giving, wealth-giving bounties and your share in the partnership is an earnest desire to "do something worth while" and be a part of the activities that transform the unproductive man-less land into a beautiful, wealth-yielding district, where homes abound and cities grow in a marvelous way.

THE END OF THE CHASE.

A truly royal trophy of the hunt. Idaho rewards the hunter with such prizes as pictured here.

THREE HUNDRED POUNDS OF VENISON AND A TON OF SPORT.

An Idaho sportsman who has something to show for his day's outing. Deer are found in nearly every county of the state, and are increasing rapidly, owing to the fact that the law permits only two to be taken in one year by any one person and only during the open season.

Table showing data relative to the water systems of Idaho cities and towns.—Compiled by State Dairy, Food and Sanitary Commissioner.

Town	County	Populat'n	Ownership	Estimated Value of System	Pipe Laid Miles	Source of Water Supply
American Falls	Oneida	1000	Private	$ 40,000	13.	Spring
Ashton	Fremont	700	Municipal	12,500	3.	Well
Athol	Kootenai	281	Private	5,000	2.	Well
Blackfoot	Bingham	3500	Private	30,000	4.	Well
Boise	Ada	24500	One private, cold	200,000	24.	Well
			do., hot and cold	750,000	80.	Well
Buhl	Twin Falls	1200	Municipal	40,000	4.	River
Burke	Shoshone	1000	Private			Mountain stream
Burley	Cassia	1400	Municipal	34,000	8.	Well
Caldwell	Canyon	3800	Municipal	100,000	12.	Well
Cottonwood	Idaho	700	Private	30,000	6.	Spring
Downey	Bannock	500	Private			Mountain stream
Driggs	Fremont	450	Municipal	22,000	5.	Mountain stream
Ferdinand	Idaho	130	Private	2,500	.265	Spring
Filer	Twin Falls	400	Municipal	16,000		Well
Franklin	Oneida	600	Municipal	16,300	8.	Spring
Genesee	Latah	800	Municipal	19,000	3.5	Well
Gifford	Nezperce	225	Private	4,000	.25	Well
Harrison	Kootenai	1000	Private	1,400	3.	Lake Coeur d'Alene
Hope	Bonner	225	Municipal	6,000	1.5	Spring
Idaho City	Boise	265	Municipal	4,000	1.	Moore's Creek
Idaho Falls	Bonneville	5000	Municipal	350,000	4.5	Snake River
Ilo	Lewis	300	Municipal	7,000	.75	Well
Juliaetta	Latah	500	Municipal	5,000	1.5	Potlatch River
Kellogg	Shoshone	1500	Private			Spring
Kendrick	Latah	550	Private	4,000		Spring
Ketchum	Blaine	250	Private	15,000	7.	Spring and Creek
Lewiston	Nezperce	7000	Municipal	2,700,000	27.	Clearwater River
McCammon	Bannock	350	Private	8,000	5.	Spring
Mackay	Custer	1000	Private	25,000	3.	Spring
Malad	Oneida	1305	Private			Spring
Meridian	Ada	700	Municipal	26,000	3.	Well
Montpelier	Bear Lake	2000	Municipal	40,000	5.	Creek
Moscow	Latah	5000	Municipal	350,000	8.	Well
Mountainhome	Elmore	2200	Municipal	35,000	4.5	Well
Mullan	Shoshone	2200	Private	18,000	4.	Creek

Table showing data relative to the water systems of Idaho cities and towns.—(Continued).

Town	County	Populat'n	Ownership	Estimated Value of System	Pipe Laid Miles	Source of Water Supply
Nampa	Canyon	4200	Municipal	100,000	17.	Well
Oakley	Cassia	1300	Private	50,000	6.	Spring
Parma	Canyon	500	Municipal	12,000		Well
Payette	Canyon	3000	Municipal	4.000	10.	Payette River
Pearl	Boise	250	Municipal		1.5	Spring
Peck	Nezperce	300	Municipal	3,500	1.75	Spring
Post Falls	Kootenai	750	Private	15,000	5.	Well
Preston	Oneida	2500	Municipal	8,700		Spring
Rathdrum	Kootenai	1000	Municipal	15,000	3.	Spring
Rexburg	Fremont	2800	Municipal	30,000	6.	Well
Richfield	Lincoln	300	Private	20,000	3.	Little Wood River
Rigby	Fremont	600	Municipal	20,000	2.	Well
Rupert	Lincoln	1000	Municipal	25,000		Well
Salmon	Lemhi	1500	Municipal	60,000	8.	Jesse Creek
St. Anthony	Fremont	2500	Private	50,000	8.	Snake River
St. Joe	Kootenai	300	Private	25,000	1.5	
St. Maries	Kootenai	1600	Municipal	38,000	10.	Thorn Creek
Sandpoint	Bonner	3000	Private	175,000	40.	Sand Creek
Shelley	Bingham	600	Municipal	20,000	4.	Well
Shoshone	Lincoln	1500	Private	25,000	5.	Little Wood River
Soda Springs	Bannock	750	Municipal	6,500	1.5	Spring
Spirit Lake	Kootenai	1000	Private	75,000	8.	Spirit Lake
Troy	Latah	700	Municipal	13,000	1.5	Spring
Twin Falls	Twin Falls	8500	Private	150,000	26.	Snake River
Wardner	Shoshone	1400	Private			Mountain stream
Weiser	Washington	4000	Municipal	75,000	6.	Snake River
Wendell	Lincoln	400	Private	10,000	3.	Well
Weston	Oneida	450	Municipal	18,000	2.5	Spring
Winchester	Lewis	500	Private	15,000		Well

HYDRO-ELECTRIC POWER PLANTS OPERATING IN IDAHO.

Name of Company and Location of Office	Location of Plant	Capacity Present Installation Horsepower	Possible Development, Horsepower	Miles of High Voltage Transmission Lines	Miles of Low Voltage Transmission Lines	Amt. H. P. in use or to be immediately used for Pumping for Irrigation
Grangeville Elec. Light & Power Co., Grangeville Ida.		550	1,100	45.	30	None
Idaho-Oregon Light & P. Co., Boise	Swan Falls, Snake River 10,000 Oxbow, Snake River 30,000 Barber, Boise River 1,500 Horseshoe Bend, Payette River 3,000	44,500	66,750	5,400.	165	6,500
Beaver River Power Co., Boise	Hagerman, Malad River	8,000	40,000	127.	55	4,000
Telluride Power Co., Grace, Idaho	Grace, Bear River	20,000	50,000	80.	20	None
Idaho Falls City Power Plant	Snake River	1,000	5,000	....	10	None
Idaho Power & Transportation Co., Idaho Falls	Snake River	3,000	5,000	32.	6	None
Rockwell White Power Co., Bellevue		800	800	9.	7	None
Shelley Mfg. Co., Shelley	Snake River	100	100	3.	5	None
Cramer Electric Co., Hailey		500	800	25.	8	None
Adam Aulback, Murray		30	30	.4	....	None
Northwestern Light & Water Co., Wallace	Coeur d'Alene River	450	450	6.	20	None
Mullan Light Co., Ltd.	Coeur d'Alene River	65	65	3.	3	None
Bonner Water & Light Co., Bonners Ferry	Kootenai River	300	300	5.	4	None
Canyon Creek Elec. Light Co., Ltd., Burke	Canyon Creek	160	160	8.	5	None
Great Shoshone & Twin Falls Water Power Co., Milner	Shoshone Falls, Snake River 2,000 American Falls, Snake River 6,500 Twin Falls, Snake River Augur Falls, Snake River Thousand Springs 3,000 Upper Salmon Falls, Salmon River 8,000 Lower Salmon Falls, Salmon River 5,500	25,000	15,000 40,000 10,000 10,000 8,000 40,000 27,500	425.	150	6,000
Lewis County Elec. Co., Nezperce	Loto Creek, Orofino River	300	2,000	40.	....	None
Idaho-Washington Light & Power Co., Spokane, Wash...	Spokane River St. Joe River Kootenai River	12,000	30,000	400.	80	.....
United States Reclamation Service	Minidoka, Snake River	10,000	15,000	38.4	4	10,000
	Boise, Boise River	3,000	4,000	16.	1	None
		129,755	372,055	6,662.8	573	26,500

Solving the Servant Problem

MRS. MARTHA SPANGLER, editor of the Idaho Club Woman, in a recent issue, says: "The old method of doing housework has made woman a drudge. In the days of our grandmothers all the cloth for garments and even the candles for light were made in the home, and multitudinous duties gave woman little opportunity for knowledge beyond the confines of her home. In those days she let men do the thinking. Edison says: 'The housewife of the future will be neither a slave to servants nor herself a drudge; she will give less attention to the home because the home will need less; she will be a domestic engineer rather than a domestic laborer with the greatest of all handmaidens, electricity, at her service. This and other mechanical forces will so revolutionize the woman's work that a large portion of the aggregate of woman's energy will be conserved for use in broadening more constructive fields.'

THE WIFE IS HER HUSBAND'S CHUM.

"The theory of the electric wizzard is that man has taken the lead so long and

A MODERN, COMFORTABLE, "CHIMNEY-LESS" IDAHO FARM RESIDENCE.

The vast amount of electrical energy that is being generated from the natural waterfalls in Idaho streams finds a large summer market furnishing power to the gigantic pumps that are used to lift water for irrigation purposes. The irrigation season opens about April 1 and closes about October 20. This means that a like amount of electrical current that finds a market during the summer period for pumping water must be used in some other way during the winter period. There is seldom interference with the great hydro-electric power plants in Idaho streams on account of ice. The turbines are kept going with no additional cost except for supervision and lubricating oil through the winter period. Large quantities of this electrical current during the winter period are sold for heating purposes. In some districts of Idaho the power companies make a flat rate for heating a home with a given number of rooms throughout the fall, winter and spring period. Estimates are made upon the cubic contents of the rooms and character of construction of building. It is not only cheaper than coal, but far more satisfactory. There is no danger of the window plants freezing when the family leaves for a few hours, or a few days, or a few weeks, for that matter. The temperature is more constant than where a furnace is used. Many homes are now fitted not only with electric heaters, electric ranges and electric lights, but many other domestic appliances that supply comfort and convenience.

the woman's work has been confined to the home and its petty, tiresome details, so that her brain has not been called upon to exercise its rightful functions. The brain must be developed just the same as the muscles, or it will atrophy.

"With the household appliances of modern time woman is fast coming into her own. She has more time for study or recreation, she is brighter, happier, more intelligent, and let us add, a more 'chummy' companion for her husband and children.

ELECTRICITY USHERS IN A NEW ERA.

"In the last decade tremendous progress has been made in the application of scientific principles to the problems of daily living. The study of household science will render this acquired knowledge to woman and help in the solution of the most vital problems. 'So great has been the advance in household science,' says Edison, 'that it is changing the whole social and industrial life of woman.'

"The women of today are studying household economics that they may learn the simplest processes and the most modern and scientific methods of housework and management. Under the new era of emancipation from the thralldom of the past drudgery of housework, the mental power of the child of the future will be marvelous, for to it the woman will make a contribution as great as that of the man.

"When all of the mental energy of woman can be devoted to the highest tasks to which it may be capable then shall she have made the greatest part in the development of womankind.

"Every woman knows the truth of the servant question. The drudgery of housework has made it impossible in many families to keep help. This drudgery and the use of the word 'servant' has kept the best class of girls from this work and sent them to the factories instead. It is almost impossible in the present day to find girls willing to do housework, because such work is considered menial.

THE BRIDES OF THE FUTURE WILL BE BETTER HOUSEKEEPERS.

"It is for the women of the nation to raise the standard, and the 'servant question' is becoming the 'paramount issue' in all parts of the country. The teaching of domestic science in the public schools is one way of solving the question. Girls are learning to do housework in a scientific manner which makes it interesting. They do not only learn *how*, but *why* they do certain things. The girl of the future, when she marries, will know how to "keep house" properly. The modern conveniences will lighten her labor and the servant question will not bother her.

AN IDAHO ELECTRIC KITCHEN.

"Idaho is particularly fortunate in having the opportunity to give a practical test to these theories. Because of the vast amount of water power that is being used to generate electricity, that great labor emancipator is becoming an active factor in the solution of this vexing question. In many of the cities and towns, and on the farms, homes are being built so that electricity can be used for lighting, heating, cooking, washing and sewing. The vacuum cleaner is taking the place of the broom, the most deadly enemy of woman.

"When the husband comes from his daily work instead of finding his wife with the backache from bending all day over a washing board, he finds her bright and entertaining; she has done her day's washing with the aid of the electric washing machine; the dinner was prepared with the aid of an electric fireless cooker and she has had time to attend the club or social meeting in the afternoon; she also has had time to personally oversee her next day's buying of groceries and meat and has returned home refreshed from the afternoon recreation. In the evening she is able to discuss the questions of the day with her husband. The children hear intelligent questions instead of the bickering and nagging of a tired housewife and they absorb knowledge from the higher mental atmosphere.

NO MORE HOUSECLEANING, HUSBANDS—CHEER UP!

"The Tuesday's ironing over a hot range on a summer day is no longer to be dreaded. The electric iron solves the question. No longer will the spring of the year be dreaded on account of spring housecleaning, when the stove-pipes must be taken down and cleaned, the grease and smoke washed from the kitchen walls, the rugs taken to the yard and beaten, the mattresses overhauled, the ashes carried from the cellar—all these discomforts are becoming memories in Idaho. The woman presses the button and electricity does the rest.

DOMESTIC SCIENCE LABORATORY WITH ELECTRIC EQUIPMENT.

The Twin Falls high school building is thoroughly modern. The domestic science laboratory is splendidly equipped with many simple yet inexpensive household articles and the domestic science class is taught household economics in a thoroughly practical and useful way. Most of the appliances use electricity rather than gas or other fuel.

PUBLIC SCHOOL POPULATION AND SCHOOL FINANCES OF IDAHO.

Compiled by the State Superintendent of Public Instruction.

Counties	No. of Children		Receipts		Expenditures		Estimated Value of School Property	
	1911	1912	1911	1912	1911	1912	1911	1912
Ada	8495	9223	$ 243,764.29	$ 378,952.55	$ 260,500.65	$ 339,962.39	$ 781,660.30	$ 860,740.00
Adams *	937	957	1,630.72	45,393.83		45,343.36	(1)	54,524.00
Bannock	5346	5480	139,614.30	232,093.65	148,635.93	165,156.14	300,114.06	360,869.05
Bear Lake	2919	2974	46,261.96	60,427.33	43,659.23	49,865.78	120,087.46	122,116.50
Bingham	4032	4190	124,258.93	94,939.90	116,202.98	150,266.29	274,700.00	337,900.00
Blaine	2663	2662	51,914.82	74,378.55	57,117.02	66,895.34	150,201.44	143,041.61
Boise	1488	1636	28,602.09	46,748.90	26,369.26	44,299.94	43,008.30	46,385.00
Bonner	3619	3804	116,194.74	144,617.58	122,062.93	144,145.32	328,735.70	355,591.06
Bonneville *	3668	4005	8,961.47	57,313.23	71,953.15	72,360.54	359,083.00	349,351.00
Canyon	8640	9029	228,380.12	322,470.10	251,779.74	305,059.51	603,021.38	611,342.51
Cassia	2905	2990	36,893.12	106,107.87	29,426.07	34,999.50	84,000.00	91,750.00
Clearwater *	1038	1228	3,911.06	43,076.37	23,646.00	46,173.94	44,783.00	56,589.79
Custer	712	781	15,753.47	19,629.20	21,706.02	20,278.40	33,480.27	35,375.75
Elmore	1236	1220	118,488.92	66,841.34	68,176.33	58,950.43	140,087.00	144,979.77
Fremont	9217	9697	167,654.88	249,770.79	182,414.98	250,803.18	328,086.44	412,030.05
Idaho	3770	3870	67,718.86	101,219.73	68,687.62	104,040.40	108,086.00	127,935.00
Kootenai	6388	6749	145,216.20	228,486.69	211,860.64	168,530.46	329,600.04	732,496.63
Latah	6525	6519	122,763.60	212,031.48	125,916.73	147,677.02	235,400.00	266,528.00
Lemhi	1068	1154	60,700.51	78,246.19	63,597.17	85,714.32	89,224.22	87,605.78
Lewis *	2058	2058	3,581.74	49,874.02	9,783.79	57,396.02	61,199.70	114,777.03
Lincoln	3032	3478	216,802.66	200,754.66	240,592.61	146,214.18	325,005.74	399,534.00
Nezperce	4554	4557	159,780.24	138,038.27	197,057.72	117,551.31	375,527.00	276,957.75
Oneida	5788	5900	113,913.22	118,872.00	121,620.55	100,229.50	230,800.50	241,000.00
Owyhee	800	841	24,537.39	21,481.47	21,900.93	21,554.90	46,284.69	49,444.80
Shoshone	2572	2769	109,901.19	195,261.14	143,985.76	128,825.83	247,115.00	249,084.00
Twin Falls	3912	4268	148,190.81	345,159.73	216,920.71	282,203.60	360,937.37	432,567.90
Washington	2565	2696	88,854.49	73,606.34	80,676.39	70,998.84	164,224.00	130,290.00
Totals	99,947	104,735	$2,594,215.83	$3,705,792.94	$2,926,250.91	$3,225,496.44	$6,164,542.61	$7,090,806.98
	1 yr. gain 4.8%		1 year's gain, $1,111,577.11, or 43%		1 year's gain, $299,245.53, or 10%		1 year's gain, $926,264.37, or 15%	

*—New Counties—Not included in early apportionments of 1911. Partial receipts reported in coun ties from which they were formed.
1—Included in Washington county.

Public Schools in Idaho

THE SCHOOL POPULATION of Idaho was 104,735 in 1912. This is a gain of 4.8% over the number shown as of legal school age in 1911.

Expenditures for public school purposes during 1912 reached a total of $3,225,496.44, or about $30,80 per capita of school population, and the value of school property was estimated at $7,090,806.98.

The state is particularly fortunate in the fact that large areas of the National forests that lie within her borders are leased for grazing purposes, and under the statutes one-fourth of the money received by the state from the National Government on account of grazing privileges is devoted to school and road purposes. For the year 1911 $52,594.33 came to the state from this source, and the school portion was divided among the counties of the state in which the receipts originated. In 1912 the fund amounted to $59,000. Nineteen counties out of the twenty-seven in the state received apportionments, such apportionment being made in proportion to the school population of each county concerned.

Another important source of revenue to the schools is from the sale of state school lands. By a provision of law, Sections 16 and 36 in each township are designated as school lands. There are over 2,000,000 acres of these lands as yet unsold and as they are sold the proceeds constitute a perpetual school fund, the interest from which is available for school purposes. This fund at present amounts to about $5,000,000.

The state is well supplied with schools, the total number being 1,540. These are divided as follows: High schools, 117; grammar grade schools, 500; rural schools, 923.

The average number of months school per year for the entire state is 7.6 and

PUBLIC SCHOOL EXHIBIT AT THE STATE FAIR, 1912

2,710 teachers are employed; or one teacher for every 38.6 children enumerated as of school age.

There are fifteen rural high school districts. These give children in the country equal educational advantages with those of the larger towns. Comfortable school wagons pick up the pupils each morning and take them to the rural high school door. In the evening at the close of school the wagons are waiting to return the children to their homes. These pupils have no tramping through mud or snow, wet grass or hot sun to reach school. Undoubtedly this makes for better health of the student body.

To one who has been born and reared in the land of "the little red school house," the Idaho country school house is somewhat of a surprise. The buildings are generally of frame, but often of brick construction, large and roomy, well ventilated, with spacious playgrounds, and adequate sanitary provision. Population increases so rapidly that many districts, in building, have provided for the immediate future by erecting school buildings of greater capacity than required for present needs, so that there is no necessity for the overcrowding of school rooms—extra rooms being opened up and equipped as needed.

The fundamental idea in the public school system of Idaho, as in every school system, is the training of the rising generation so that they shall be useful, helpful, loyal citizens. But the means employed to accomplish this end are different in many respects from the means employed in the public schools of earlier days when a course of study comprising the "Three R's" was thought to include all things needful. In fact, it might be said that there were four "R's" in the course, for the rod was as indispensible as the " 'rithmetic."

It has gradually dawned on thinking men and women, however, that ability of the pupil to "cipher" through the "rule of three," write a "copper-plate" hand and spell through Webster, does not by any means "spell" ability in that pupil to meet and master the problems of life in after years, or even the problem of getting a living. In short, it has become clear that the school system that stops short of assisting the pupil to put into practical, every-day use the theories and principles he has been taught is far from the ideal.

The world's rapidly increasing population demands food and clothing, and in a broad sense the efforts of the human race are directed mainly to the supplying of these two necessities.

But, it is also true that the standard of living has risen, so that today we demand better food and better clothing than our forefathers had or cared for. On the other hand, production of food and clothing supplies has fallen away below par in many parts of the country, so that were it not for newly opened fields of production we should even now be in the famine stage. Even with these new fields our supply has not kept pace with the demand, and prices on the necessities of life have risen steadily.

The average producer of these necessities has followed methods handed down for generations. The same may be said of home management with regard to the problem of the preparation of foods so that they will yield the maximum amount of nutrition and at the same time be more economical. In short, the great American public is squarely confronted with the problem of the necessity for greater economy in the production, preparation and use of the two prime necessities before mentioned, viz: food and clothing.

Scientific investigators have discovered many things that go to make this problem less difficult of solution, but it would be too much to expect that new methods, however economical or beneficial, could be made to supplant among the men and women of today, time honored methods, be they ever so extravagant or wasteful.

Happily, however, the public school offers an ideal medium through which scientific and economical methods in production and use can be demonstrated in the most remote settlement as well as in the metropolis.

Idaho lays no claim to having been a pioneer in this work, but she has been quick to recognize the advantages accruing to many of her sister states where such instruction has been made a part of the public school curriculum.

Most of the vocational school work done in Idaho so far has been along the lines of agriculture and domestic science. In 1911 there were 66 school gardens, in 1912, 466. Potato growing clubs were organized for the boys and girls and sewing clubs for the girls. These clubs had district contests and the prize-winning exhibits were sent to the county fair. The exhibits winning first prize there were sent to the state fair.

The first prize winner in each county was brought to the state fair for the week. A large tent held their exhibits, and smaller tents were provided for living quarters and dining room. All was under proper chaperonage. The girls and boys were given instruction during the week in agriculture and domestic science by instructors from the state university, and by a goverment expert in dry farming.

In some of the counties of the state, work along other lines in addition to that indicated above has been carried on—stock-raising and judging, road building, woodworking, cooking, home sanitation, etc.

One of the most encouraging features of this work is that not only do the children

become interested, but fathers and mothers and friends become enthusiastic also. Already the effects are to be seen, and slowly but surely science and economy are taking the place of haphazard and waste in the field and in the home.

It would be difficult to estimate the benefits that must come to the state and to our people from this phase of educational work. It is estimated that $1,000,000 has been saved to the state of Oregon by the school children from the products of their agricultural efforts. But aside from the important economic questions involved, the matter of greatest moment after all is that our boys and girls are made more efficient; they learn not only the *why* and the *how*, but *to do*.

State and Sectarian Educational Institutions

THE STATE OF IDAHO has made liberal provision for those of her youth who, having completed the primary, intermediate and high school courses desire to continue their education.

Almost a quarter of a century ago the legislature of what was then Idaho Territory established the University of Idaho, locating the institution at Moscow in Latah county.

An Agricultural Experiment Station, co-operating with the United States Department of Agriculture, is now an important adjunct of the University School of Agriculture. Branch experiment stations are conducted at Clagstone, Caldwell, Gooding and Aberdeen.

The high standard maintained and the strong faculty employed has given the University a place of high rank among similar institutions in other states. Our young men and women are enabled to fit themselves for engaging in the professions, arts and trades. The success that has attended our university graduates who have gone forth is testimony of the efficiency of the institution.

Dr. K. C. Babcock, specialist in Higher Education in the United States Bureau of Education, says of our State University: " * * * The University of Idaho surprised me by the excellent quality of its equipment in buildings, grounds and laboratories. * * * The quality of the faculty is surprisingly good, both as to training and experience. Conditions are such that it has a better degree of stability than have several other of the State Universities of the west. * * "

The number of students enrolled in the university for the year 1912-1913 as shown by the December (1912) report was 709. This enrollment represented seventeen states and two foreign countries.

Idaho supports two state normal schools, one at Lewiston and one at Albion. These schools are well equipped, and offer exceptional advantages for preparation to the young man or the young woman who expects to engage in the profession of teaching.

The Academy of Idaho, located at Pocatello, the Idaho Industrial Training School at St. Anthony, and the State School for Deaf, Dumb and Blind at Gooding are other state educational institutions with excellent records.

In addition to the various state institutions of learning, there are scattered throughout the state many schools supported by various churches. Among these are the College of Idaho (Presbyterian) at Caldwell, St. Margaret's Hall, (Episcopalian) at Boise, Ricks Academy (Church of Jesus Christ of Latter Day Saints) at Rexburg, and the Academy of of the Immaculate Heart of Mary (Catholic) at Cœur d'Alene. The Methodist church has in contemplation plans for the establishment in the state of a high grade college. If these plans materialize this institution will in all probability be located at some point in the southern part of the state.

A matter worthy of note in connection with our state institutions is the work being done in agriculture by the extension department of the State University. Trained experts are sent out. These experts conduct "movable schools" in every section of the state. Problems in connection with animal husbandry, dairying, horticulture, poultry, soils, irrigation, dry farming methods and kindred subjects are illustrated and explained before farmers' classes and district institutes. These lectures are of great benefit to all, but to a newcomer they offer a valuable source of information as to successful methods and practices in farming under Idaho conditions, and all "without money and without price." A trained agricultural expert has been employed by Lincoln county. Other counties have negotiations under way for a county expert.

History of the Lattig Orchard

IN THE SPRING of 1900, George Lattig bought a 40 acre home in the Payette valley and began preparing what was to become his orchard home. It was a serious undertaking and deserved his careful thought and well-defined plans. He was a young man with only limited capital, but he had lots of red blood and a purpose not easily thwarted. The land with water right cost him $75.00 per acre, or $3,000.00. He was not required to make a large cash payment. The capital that he had was set aside for use in clearing, developing and improving his farm home. Posts for fencing and lumber for his buildings cost a little less than the price commonly prevailing in his former home in the middle west. Woven wire fence, barbed wire, nails and hardware cost him a little more than he had formerly paid. One year old unbranched apple trees cost him 15c each. By exchanging work with one of his neighbors at intervals, he did not need to hire much help the first two years.

He planted 35 acres of the 40-acre tract to apple trees. He was able to grow sufficient crops between the trees to produce all the feed that was needed for his three head of horses and two cows, and was growing a considerable amount of potatoes and other vegetables that were sold.

It was quite a task to properly prune the 35-acre orchard. The pruning for the first three years was done during February and March. Summer pruning was practiced the fourth and fifth year. Judicious summer pruning has a tendency to check rampant wood growth and causes the tree to direct its energy into the development of fruit-spurs.

A study of the following table indicates that Mr. Lattig did not allow his trees to produce commercial crops, however, until the trees were well established.

The sixth year after planting, nearly all of the fruit was removed from the trees. The seventh year after planting (1907) the entire orchard gave him an average yield amounting to $74.00 per acre, or $2,590.00. The following year the 1908 crop brought him $8,550.00, or $244.00 per acre. In 1912 he had an average of $471.00 per acre, a total of $16,500.

The seven year period of the orchard, beginning when the trees were only six years old, has given him a total yield amounting to $44,890.00. The trees are

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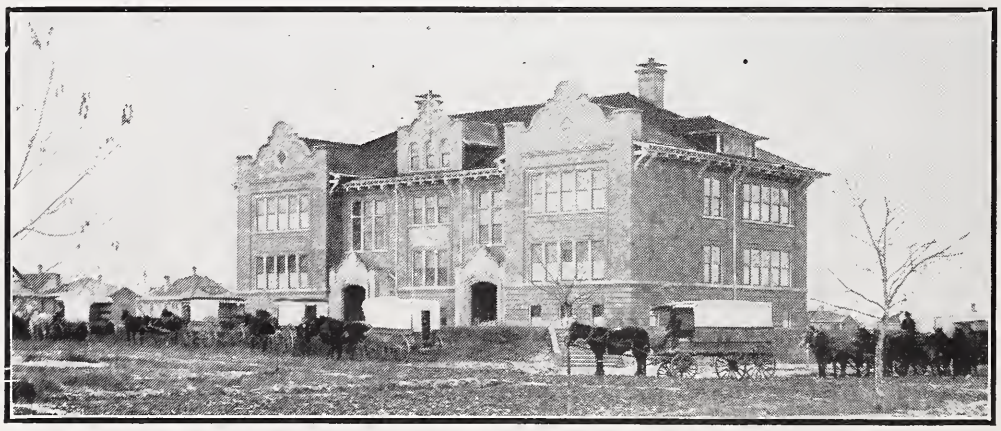


A CENTRALIZED SCHOOL AND SCHOOL CONVEYANCES.

There are fifteen centralized schools in Idaho. These consolidated districts are able to offer to the boys and girls in the country advantages in the way of intermediate and high school instruction equal to the best that the city can offer. The problem of "getting to school" no longer bothers the country pupil. The school wagons shown in the illustration carry him to and from school each day. The consolidated district is financially able to employ the best of instructors—men and women of experience and refinement. There is less to distract the rural school student from his studies than in the city or large town. From the time the pupil leaves the parental roof in the school wagon in the morning until he returns in the evening he is under competent supervision and care. His moral and physical surroundings are far better than any city can offer, and his opportunities for healthy bodily and mental growth are enhanced thereby.

now in their prime, and will continue to yield Mr. Lattig annual crops that will mean a larger net profit than he knows how to spend.

REPORT OF RETURNS FROM THE GEORGE LATTIG APPLE ORCHARD.

1906 received	$ 150.00
1907 received	2,590.00
1908 received	8,550.00
1909 received	100.00
1910 received	14,100.00
1911. received	2,900.00
1912 received	16,500.00
In seven years the total yield from 35 acres was	$44,890.00
Annual Average for the seven-year period	6,412.85
Annual average per acre for seven years	183.22

In the Santa Rosa orchard one acre of Arkansas Black packed 900 boxes of fruit in 1911. It requires only about 600 boxes to fill the standard refrigerator car. Five acres of Italian prunes in the same orchard yielded 1,200 crates per acre or 6,000 crates in 1912. Twenty-five acres of apples, five acres of prunes and one acre of plums in this orchard have produced a total annual average of $16,692.50, or $538.46 per acre.

In the Hope-Hurst orchard 6½ acres of pears, now fully developed, last year gave gross returns amounting to $2,828.41. The expense of production amounted to $977.59. The net profits were $1,850.82 on the 6½ acre tract. Nine acres of six year old apples gave net profits amounting to $3,234.84, after deducting all expenses, including all labor which was hired,

E. B. Sargent from five acres of apple orchard received $4,000 in 1910; $2,000 in 1911, $2,625 in 1912, or an average of $2,875.00 per annum for the three years from the five acre orchard.

Clearing and Leveling for the Lattig Orchard, March, 1901.

A man and a three-horse team at each end of a 14-foot railroad iron will clear from 5 to 10 acres of sage brush per day. The brush is dragged out, roots and all, ready to be piled and burned. If there are knolls to cut down and depressions to fill, a 4-horse Fresno, which is a large scraper, is used. Then the land is plowed and a heavy double-frame drag, which is called a float or leveler, is used to float and smooth the land. The entire process of clearing the brush, leveling, plowing and smoothing the land costs from $10.00 to $20.00 per acre—depending upon the virgin condition of the land.

LATTIG ORCHARD, MAY 25, 1902.

The above photograph shows a view in the Lattig orchard May 25, 1902. The trees were planted in the spring of 1901.

LATTIG ORCHARD, JANUARY, 1905.

Showing a view in the Lattig orchard in January, 1905. The heavy frost upon the trees gives a very pretty effect. An indistinct outline of the comfortable residence may be seen looking through the tree in the foreground. It will be observed that the tops are set at about 18 to 24 inches from the ground. The tops are so trimmed that the land may be cultivated right up to the tree. The angle of the branches as illustrated by the trees in the left foreground indicates that a heavy burden of fruit may be carried without threatening to split the limbs from the body when the tree has attained large size and is carrying large crops of fruit.

E. J. Rotering from 6½ acres of apple orchard received $8,800.00 in 1910; $3,500.00 in 1911 and $7,500.00 for the 1912 crop. This was an average of $6,600 per annum from the 6½ acre orchard.

After all expenses were paid, George Windle from 12 acres of prunes and 25 acres of apples received for his 1910 crop $10,000; 1911 $3,000; and 1912 $10,000, making a net annual average amounting to $7,666.66, or $207.20 per acre.

E. T. Bowman has had a gross annual average for three years from 13 acres of orchard now twelve years old, amounting to $5,390, or $414.61 per acre per year.

This brief history of the Lattig orchard and the other orchards above discussed can be duplicated in many different communities by many growers. More phenomenal returns have been had by large numbers of orchardists. The examples herewith shown are a fair average.

LATTIG ORCHARD, OCTOBER, 1910.

Showing a view of the same orchard in 1910. Notice the large and uniform size of the Rome Beauty apples on each of the trees. They are well distributed throughout all portions of the tree. These trees packed an average of 16 boxes per tree of strictly fancy apples and yet they do not threaten to split and break down under the load.

The method of training the tree while young sets the top to withstand the crop burden that may be expected of the mature tree.

Proper thinning of the fruit is another secret in preserving trees bearing heavy yields. The thinning process leaves the fruit well distributed throughout the tree. The pruning process opens the tree sufficiently to admit air and sunshine to aid in giving proper color and finish to the specimens that are produced in the interior of the tree.

Regulating the amount of fruit that a tree may bear allows normal growth of fruit spurs that will yield the next year's crop. The science of pruning and thinning preserves a normal development and aids the tree to produce annual crops instead of biennial crops.

Horticulture

IT IS ESTIMATED that within five years Idaho will double or probably treble the present apple production. An increase will also occur in a few other favored commercial orcharding districts. Comparing this increase it is interesting to note that apple production in many of the older agricultural states has decreased at a more rapid rate than has been the increase in the favored commercial orcharding districts; for instance, the great Mississippi valley is producing millions of bushels of apples less than was produced a few years ago. The population of these same states shows a large increase in the same length of time. This population must be fed. They are in a wealth-producing country and buy what they want. They are growing other crops, and they are now buying superior Idaho grown apples.

More apples are consumed per capita today than twenty years ago. There are well defined reasons for this. Apples are now better grown, better packed and better distributed. Modern shipping and storage facilities have greatly lengthened the season for use in the fresh state.

AN AGE OF SPECIALIZED INDUSTRY.

To those studying history relative to the production, distribution and consumption of all the chief agricultural crops, readily conclude that the science of agriculture as applied to fruit growing, to the corn crop, the cotton crop, the tobacco crop, the wheat crop, is being developed in the regions where soil and climate are best suited for the commercial production of that particular crop.

It is conceded that the favored districts of the northwest are now growing the largest and most profitable yields of strictly fancy apples of the choicest quality that are grown in the world. The elements of plant food contained in the soil and the unusually favorable climate are chiefly responsible for the large yields and superior quality and attractive appearance.

The apple growers realize, however, that much must yet be done in order to enlarge the consuming market as it deserves to be enlarged. Transportation facilities are being constantly improved. The keeping quality of the apple, at different degrees of temperature, and the length of time that a given variety will keep when correctly ripened, picked and packed is now known so that distribution and consumption are being studied and carried out upon a thoroughly sound economic basis.

CRITERION EXAMPLES.

A study of the banana furnishes an excellent illustration of applying science and sound economic business to the distribution of fruit production. Twelve years ago only the larger markets had bananas available for their trade and then only on Fridays and Saturdays. Today even the small corner grocery has a choice quality of bananas for sale every day in the week. The banana crop is practically all an imported crop. The industry has grown from only a few thousand dollars a year to something more than a million dollars a month. A like development has taken place in the production, distribution and consumption of the citrus fruits, particularly oranges, lemons and grape-fruit.

SUBSTANTIAL PROGRESS.

During the last three years there has been an unusual amount of well directed

investigational work relative to the methods of harvesting, grading and packing, and also to the distribution and the cultivation of a consuming market for apples and other fruits. These investigations have been carried on by the United States Department of Agriculture, the state experiment stations, the railways, the large city markets and by individuals and associations in the principal fruit growing districts.

What has been said with reference to the apple, applies also to other fruits. Idaho is one of only four states that produces a superior quality of prunes, upon a commercial scale.

In some parts of the state the prune orchards rival the apple orchards in showing net profits per acre for a series of years. The young prune orchards come into bearing almost as early as the apple orchards. Profitable crops of apples are usually harvested the sixth year after planting; frequently there will be considerable fruit the fifth season from planting one year old trees. The apple will always be the most widely used fruit in America. A liberal export outlet is now being developed in the Orient and many other foreign countries. The use of the American grown apple and prune in the fresh state is being rapidly extended in many European markets.

A BETTER QUALITY OF FRESH AND PROCESSED FRUITS.

The quality of fruit offered in the fresh state has taken a higher standard than was ever known before the science and skill and natural advantages of the northwest became a factor in the fruit markets. With improved transportation facilities, apples and prunes are now loaded into cooled cars at the orchard and are moved under well regulated refrigeration to foreign countries where it opens up in perfect condition.

The quality of the evaporated products is also superior to the products that were commonly found upon the markets in former years. The home and commercial evaporating establishments and the home and commercial canning plants are now processing a higher grade of fruits and preparing the products in large quantities, under absolutely sanitary conditions and putting the finished goods into attractive packages so that the consumer may purchase thoroughly wholesome, nutritious fruits and vegetables, in many varieties. The constantly increasing demands require larger quantities each year.

In the more favored locations, peaches and apricots are grown extensively. In addition to large amounts that are shipped in the fresh state, the canning factories use thousands of tons. There is almost no limit to the quantity of peaches and apricots that the markets will take as there are only a comparatively few districts in the United States where there two fruits may be grown with a degree of certainty, each year, that will warrant the equipment of a canning factory to handle them.

The peach begins to bear the third year after planting. It is frequently planted as a filler in the apple orchard. Several profitable crops of peaches are harvested before the apple trees get large enough to require the room.

The cherry is also easily grown, and, like the prune, requires a minimum amount of care. The sour cherry succeeds over a much wider territory than does the sweet cherry but where the location is right the sweet cherry is more profitable. The sour cherry must be marketed within a shorter shipping radius than the sweet cherry, which goes to the far distant markets and opens up in prime condition, when properly picked and packed and shipped under refrigeration. Both types of cherries have a wide market when canned or preserved. The sweet cherry makes the more rampant growth than does the sour varieties and it does not come into bearing quite so early as the sour kinds.

The production of all kinds of small fruits, including the berries, currants and gooseberries do not differ greatly from methods commonly in vogue in the older states, except in localities which grow upon a very extensive scale for shipping in the fresh form or for canning, preserving, evaporating, and in the manufacture of syrups for the confectionery and baking trade. The greater the community output, the greater the skill employed.

There are districts where the soil, climate, altitude and other environments, such as locations that furnish favorable conditions for air drainage which minimizes injury from late spring frosts, which cause the fruit industry, in one branch or another, to develop upon a large and profitable scale. It is difficult to furnish a complete treatise upon the many qualifying features. Those searching for a new location are urged to make personal investigations.

Those who are familiar with growing small fruits understand the importance of a well regulated moisture supply. Excess rainfall at inopportune times, or a drouth, even for a few days at picking time, often cause heavy losses. Irrigation offers relief against those risks. Then, too, some of the safest orcharding and small fruit growing districts are found in the intermountain country where there is sufficient rainfall and a deep retentive soil that gives regular and dependable crops.

There are six commercial canning plants now operating in the state. The Idaho Canning company, Payette, and the Sprague Sanitary Preserving company at Lewiston are the largest. During the year 1912 the Payette plant canned 28,000 cases or 35

THE WAY THEY BEAR IN IDAHO.

A Jonathan tree eleven years old that yielded twenty boxes of extra fancy apples. A part of the foliage has been removed to show how the fruit is distributed throughout the tree and also the uniform, large size of the specimens. The main branches of the tree have grown at an angle that support the heavy weight without splitting or breaking. Only two props were used. The trees in this orchard are set 26 feet apart in the rows and the rows are 32 feet apart.

carloads of peas, 65 tons of sweet cherries, mostly of the Royal Ann and Bing varieties; 8 carloads of pears; 3 carloads of apples; 2 carloads of plums and 1 car of apricots.

The Sprague plant manufactured the equivalent of 1,025,000 quarts of fruit and vegetables or sufficient to load 65 cars. The total number of pounds handled in the various items were as follows:

Cherres	560,431
Peaches	911,299
Plums and Prunes	425,500
Pears	347,610
Gooseberries	27,477
Apricots	32,970
Apples	869,766
Berries	20,532
Rhubarb	3,701
Grapes	9,071
Tomatoes	529,088
Beans	28,428
Peas	1,919
Cantaloupes	17,105
Cabbage	9,725
Lettuce	46,045
Spinach	48
Beets	656
Turnips	1,620
Radishes	514
Cucumbers	23,980
Potatoes	1,145,403
Total	5,012,888

The total season's disbursements amounted to $170,859, of which $15,282 was paid out for labor.

A MODERN IDAHO APPLE PACKING HOUSE.

The large volume of apples that must be handled within a period of a few weeks' time in the autumn has necessitated the installation of equipments and systems that will facilitate handling the crop rapidly, economically and carefully.

The photograph herewith shown illustrates a mechanical apple grader invented by Mr. B. F. Hurst, an extensive Idaho orchardist. One man and eight women with the aid of this machine will accurately size and grade for color at the rate of three carloads or 1,900 boxes per day. The machine effects a saving of 25 employes and does the work better. Electricity is used for motive power. The use of this machine reduces the per cent of bruising and chafing to a minimum. It amounts to less than ten per cent of the bruises ordinarily found where the work is all done by hand. Communities are establishing central packing houses that greatly facilitate and systematize grading and packing.

A Fruit Farm Success that Beats a Salary Job

The Farm Canning Plant

In the spring of 1907 Harry L. Yost concluded to quit the telephone business and with his savings, made his first payment upon a 20-acre tract of unimproved land in the Boise valley which cost him $1,500, on which he built a modest yet comfortable home.

He cleared and prepared the tract in the spring of 1907 and planted 320 sour cherry trees. In the spring of 1909 he planted 500 more sour cherry trees. His most valuable varieties are the English Morello and the Late Duke. His 1910 crop yielded him $1.10 net per tree. His trees are planted 110 per acre. The 1911 crop yielded a trifle more than $2.00 net per tree.

In the spring of 1912 he installed a canning plant, as illustrated in the accompanying photograph, which cost him all told, less than $250. His profits through the sale of fresh fruits and the 5,000 gallons of cherries which he canned were very much greater in 1912 than from previous crops. In addition to cherries, he canned dewberries, peaches, tomatoes, corn and beans. His per cent of loss in canning was very small. The quality of his product gives him a ready market at reasonably good prices.

The photograph in the center shows one of his young trees with its burden of luscious fruit. Master Yost, Jr., has become a very efficient assistant general manager.

The cherry tree and children shown in the upper corner were photographed upon a neighbor's premises in June. The value of the fruit orchard cannot be measured entirely by the gallons or bushels of fruit harvested. Even the smaller children are happy to have an opportunity to aid in gathering the fruit. There is a wealth of content and happiness shown on the faces of the children.

The photograph in the upper right hand corner shows the boiler upon the Yost ranch which furnishes the steam for the cooking and canning operation. In the lower left hand corner two large retorts are shown and in the lower right hand corner the boiler and the canning operation is shown.

The entire process is a simple one. The plant is not expensive to operate. The outfit here shown has a capacity of 5,000 1-gallon cans per day, using two men and two boys to operate. Less than 100 pounds of coal is required per day to steam the boiler.

The home canning plant and evaporator are becoming an established part of large numbers of Idaho fruit farms. It means employment for all members of the family, supplemented by neighboring help. It also means a greatly enlarged market. Generally the busy season occurs during vacation time, when boys and girls are glad to have an opportunity to earn wages.

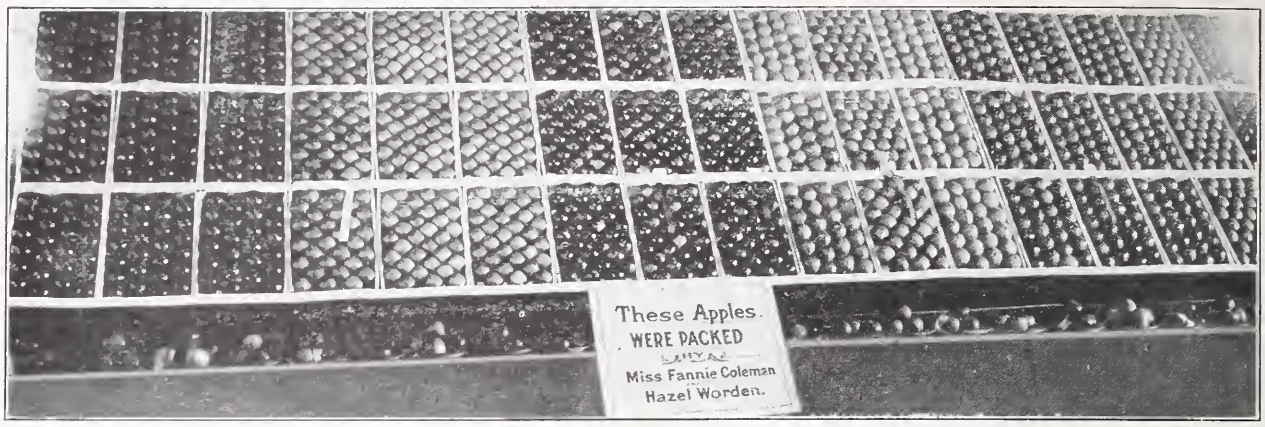
There are six large commercial canning factories operated in the state. The commercial canning factory and the home canning factory will prepare large quantities of fruit and vegetables, in an inexpensive way, so that the season for their use may be extended indefinitely.

The sour cherry and sweet cherry, as grown in Idaho, are two of the choicest products for table use.

Here is an example illustrating what a man with a small amount of capital, with energy and ambition, can accomplish in a few years of time.

There are thousands of salaried men who would be glad to exchange their positions for an independent, profitable business such as Harry Yost has developed. His 20-acre fruit farm is now easily worth $12,000 and will become more valuable. His family has the advantages of an excellent graded school, churches, lodges, interurban railway, telephone and electrical current for their domestic needs. Verily, this is "pioneering with the hardships left out." It is true that it does require rather strenuous work during a few weeks in the year, but it is not a twelve-months' grind as is the case with many people who must "ring up the time clock."

There are many who desire such a home and an independent living with wholesome surroundings for their families. There is a home with health and wealth dividends awaiting you and your family in Idaho.



PRIZE-WINNING APPLE EXHIBIT.

The above photograph shows the uniform grading and type of packing that has made Idaho apples famous throughout the United States and many foreign countries. It is important to produce choice fruit and it is equally as important to have it carefully picked, uniformly graded and packed so that it will reach the consumer in perfect condition. It is commonly conceded that women are equally as skillful as men in packing apples.

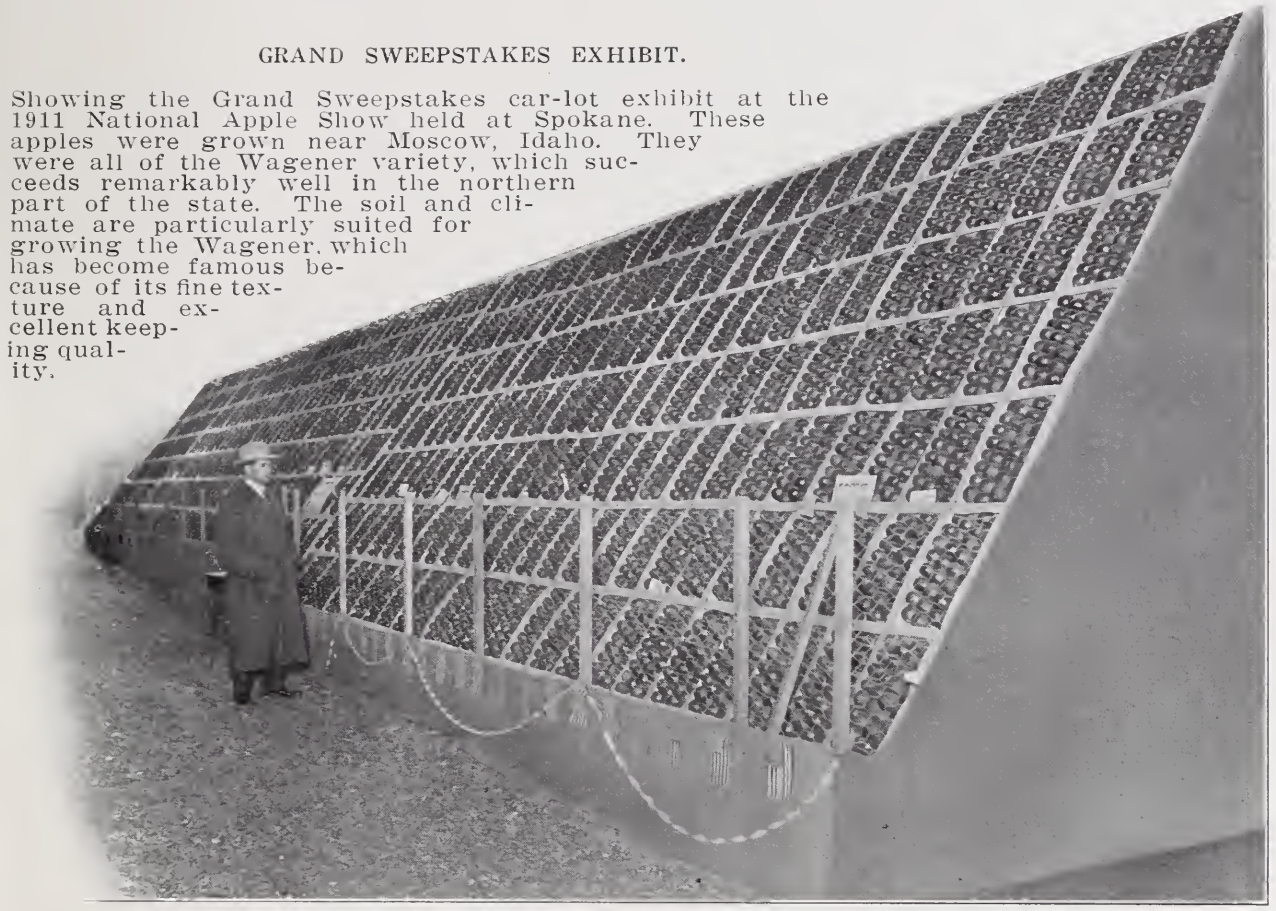
"MY BACK BEGINS TO ACHE."

The son and daughter in the Bowden home in Bonner county are partners with their parents in the strawberry patch which is located in the adpoining vacant lot. The children take a keener interest in the strawberry patch when they share the revenue derived from selling the surplus berries. The family have a continuous supply of the choicest berries for several weeks in the spring and early summer and a light crop again in the fall.

Notice the luxurious growth and wonderful productiveness of the plants. Any boy or girl can earn almost a man's wages picking such berries at two cents per quart. Children, however, should not be kept employed more than a few hours during the day. The Bowden strawberry patch is only 50x142 feet but it is large enough to furnish all of the fruit that is needed for home use and allows them to sell from $40 to $50 worth per season. The sale of plants also brings in considerable revenue. There are many homes where there is a vacant lot adjoining and, for that matter, many farm homes that might well profit by following the plan adopted in the Bowden home. There is a ready market in practically all communities for the surplus berries.

GRAND SWEEPSTAKES EXHIBIT.

Showing the Grand Sweepstakes car-lot exhibit at the 1911 National Apple Show held at Spokane. These apples were grown near Moscow, Idaho. They were all of the Wagener variety, which succeeds remarkably well in the northern part of the state. The soil and climate are particularly suited for growing the Wagener, which has become famous because of its fine texture and excellent keeping quality.



WHERE THE LUSCIOUS SWEET CHERRY COMES FROM.

There are only a few districts in the United States where the sweet cherry can be safely grown in a commercial way. Even in Idaho, with its mild climate and reasonable safety against damage from late spring frosts, the sweet cherry can be grown only in comparatively small areas in the more protected districts. It is one of the most profitable bearers, however, where conditions are right.

WHERE "HOME" IS SPELLED WITH CAPITAL LETTERS.

There is something restful and satisfying in this view.

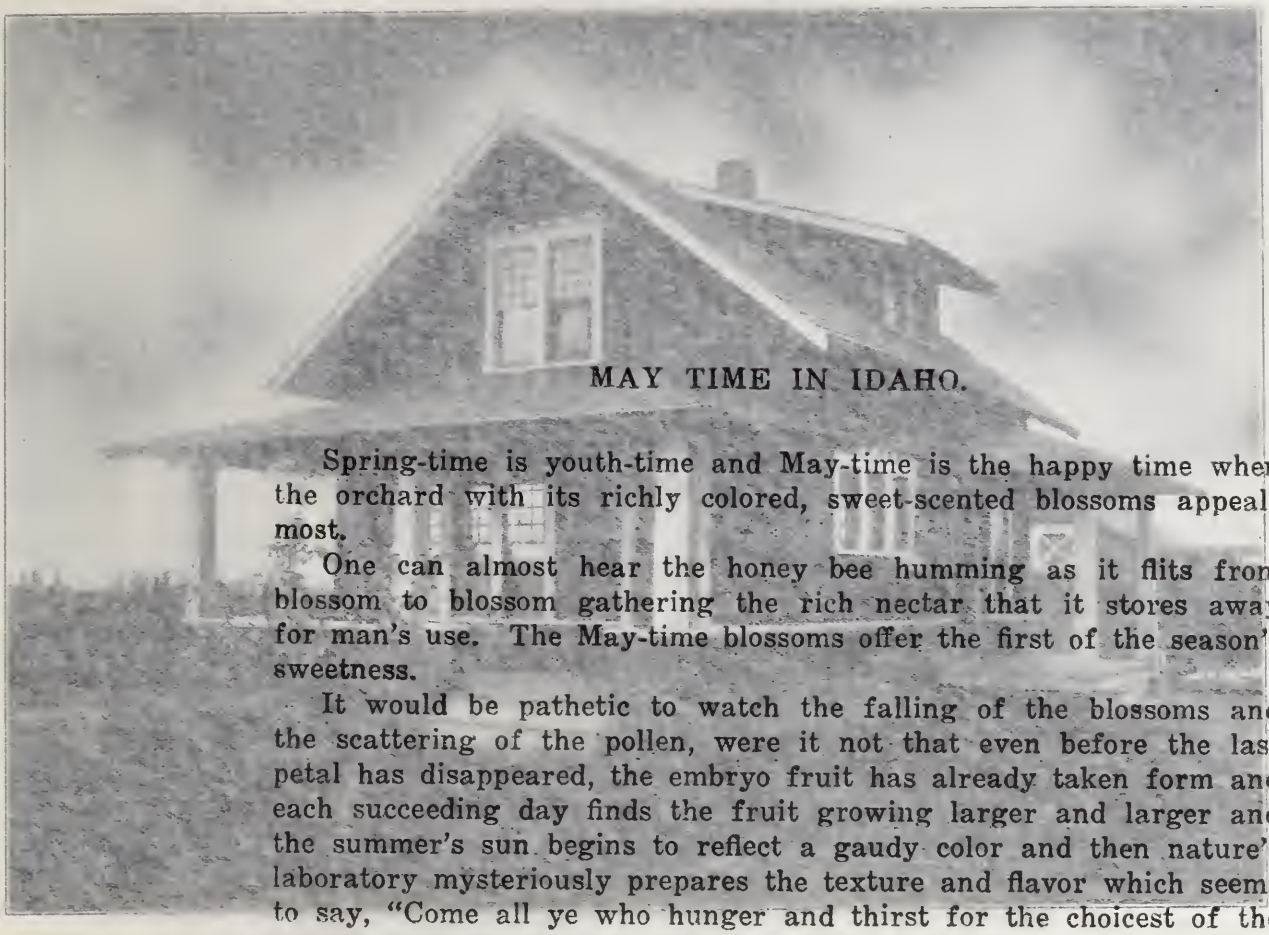
Many farmers who have always operated large farms, hired a great deal of help, had many perplexing problems which are always attached to large enterprises, have longed for just such a farm as illustrated here. This is a typical farm home in the Payette valley. Fourteen acres are planted to apple trees which are now 3 years old. The owner, Mr. Bullis, intercropped three acres of the orchard to peas, which were sold to the local canning factory. The peas brought him $286.17. The peas are a leguminous crop and served to better fit the soil for the future orchard. Three dozen hens are kept and the poultry income amounts to nearly $100 per year. Five hundred pounds of butter are sold, which brings better than $150. A brood sow and her litters add more than $125 per year, in addition to furnishing the family with meat. Seventy-five dollars' worth of surplus hay was sold and $175 worth of potatoes and other items brought the family income above $1,000 a year, in addition to their living. Another year the orchard will yield considerable fruit. The orchard, hereafter, will be the chief revenue producer.

The corn crop yields from 65 to 75 bushels of good, sound corn. That irrigation ditch is an insurance policy against drouth. This well regulated and dependable insurance policy costs a "premium" amounting to $10 a year for the up-keep of the canal. There are many extensive farmers who have far more worry and much less net profit and far less pleasure than the owner of this and many other small irrigated farms. Small farms mean near neighbors, with schools and churches convenient.

This home and the premises have required only three years' time to develop. There are 43,242 twenty-acre tracts available in Idaho where water is now flowing, which can be purchased at $40 to $75 per acre, including permanent water right. Long, easy payments are granted.

There are now 15 rural high schools in Idaho. In these schools elementary agriculture, domestic science and other of the sciences are taught. Graduates are accredited to the state university. Idaho's educational system is adjusted to fit the real needs of the farm home, the village home and the city home. It is possible in these progressive communities for the sons and daughters to live at home with their parents while receiving their education that fits them for useful lives. In many communities in many states, the great bane of country life has been the lack of educational opportunities for the sons and daughters after passing the eighth grade work. Centralized schools have done a great service. Not far from the home here illustrated, the Washoe school has been established along advanced lines. A thoroughly well equipped instructor with capable assistants are teaching agriculture, domestic science, manual training and other useful branches that are not commonly taught in country schools. Life is worth while, in comfortable farm homes in such communities. Do you spell HOME with capital letters?

"See America First"—Begin with Idaho.



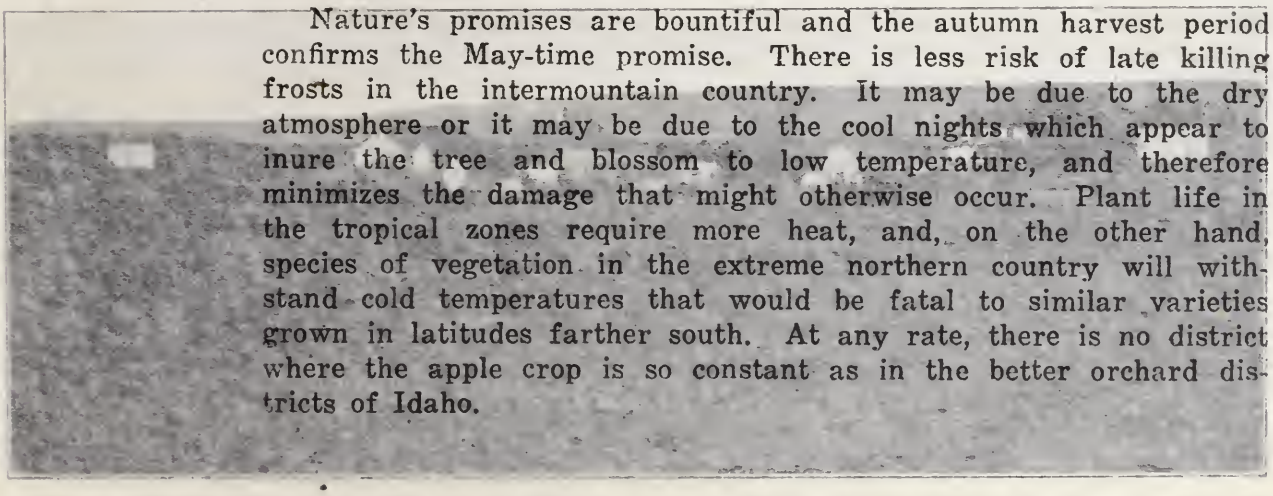
MAY TIME IN IDAHO.

Spring-time is youth-time and May-time is the happy time when the orchard with its richly colored, sweet-scented blossoms appeals most.

One can almost hear the honey bee humming as it flits from blossom to blossom gathering the rich nectar that it stores away for man's use. The May-time blossoms offer the first of the season's sweetness.

It would be pathetic to watch the falling of the blossoms and the scattering of the pollen, were it not that even before the last petal has disappeared, the embryo fruit has already taken form and each succeeding day finds the fruit growing larger and larger and the summer's sun begins to reflect a gaudy color and then nature's laboratory mysteriously prepares the texture and flavor which seems to say, "Come all ye who hunger and thirst for the choicest of the world's products and ye shall be satisfied."

The orchardist who really cares for his orchard is in close league with nature. While the trees have been in dormant state during the winter, he has had time for study and research and he is now prepared to anticipate the season's requirements and is fully equipped for every need.



Nature's promises are bountiful and the autumn harvest period confirms the May-time promise. There is less risk of late killing frosts in the intermountain country. It may be due to the dry atmosphere or it may be due to the cool nights which appear to inure the tree and blossom to low temperature, and therefore minimizes the damage that might otherwise occur. Plant life in the tropical zones require more heat, and, on the other hand, species of vegetation in the extreme northern country will withstand cold temperatures that would be fatal to similar varieties grown in latitudes farther south. At any rate, there is no district where the apple crop is so constant as in the better orchard districts of Idaho.

WHEN THE ONE O'CLOCK WHISTLE BLOWS IN THE LEWISTON COUNTRY.

Some of the most extensive commercial orchards to be found anywhere in the northwest are located in the Lewiston country. The above photograph shows the many teams and equipment as they are ready to leave for the fields early in the spring. In addition to the teams that are herewith shown, two large gas tractors are sometimes operated both day and night, supplementing the team equipment.

Spring time is always a busy time with the commercial orchardists. The pruning and part of the spraying are finished before cultivation begins. It is important that cultivation should begin promptly that all moisture may be conserved and the soil put in the best possible condition for the growth and development of the orchard. When the orchard is in blossom the power sprayer must be operated unceasingly that the spraying may be done at the correct period of blossom development so that the insecticide spray will be most effective. It is equally as important to know when to spray as it is to know how to prepare the solution. There is nothing mysterious, however, about the proper care of the commercial orchard.

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Showing a modest though comfortable newly established cottage home in one of the orchard districts of Idaho.

The owner was formerly a resident of Wisconsin, but now finds his new home more to his liking. By doing considerable of the construction work himself, he built the above four-room cottage at a cost of $670.00 complete. The home is built upon a modest plan, but shows good taste and offers an inviting appearance.

There are large numbers of people who yearn to exchange their homes in the cold-winter country for a home in the mild climate, orchard sections of Idaho.

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GETTING THE HABIT EARLY.

Fruit trees in the intermountain country of the northwest begin to bear earlier than do the trees in the older districts.

The tree shown in the accompanying photograph has been transplanted scarcely more than three years. The soil and climate cause the young trees to make a vigorous, sturdy growth. The trees develop fruit spurs early.

It is not uncommon to find three year old trees carrying samples of fruit as shown in this photograph. There are not many commercial orchardists, however, who permit the trees to produce a crop earlier than the fifth year.

AN ORCHARD THAT MAKES GOOD.

Showing a view in O. F. Short's prune orchard which yielded him a net profit amounting to $470 per acre in 1912. The tree in the immediate foreground is a sweet cherry. Mr. Short received a check for $4,327.89 for his crop off of nine acres of bearing prune trees. The fruit was sold at wholesale in the fresh form on a contract basis that takes his crops for the next seven years.

It will be seen that the sweet cherry blossoms very much earlier than the prune and most other fruits; therefore, only a comparatively few locations are suited for growing the sweet cherry. The apricot also blossoms early, and like the sweet cherry, it is liable to injury from late spring frosts. Locations that will safely grow these two fruits are rare and usually high priced.

Showing a section of the apiary premises of George W. York of Bonner county.

Busy Bee Homes

ALL of the clovers thrive in a wonderful way in northern and central Idaho. Besides the clovers and alfalfa, many other plants that yield rich amounts of nectar are available to the honey bee throughout a long continuous period in the summer. This accounts for the heavy yields of honey that are commonly had in Idaho.

One bee keeper who pays careful attention to his colonies produced 240 pounds of extracted honey per colony; another, 150 pounds of comb honey. The 1912 season was rather cool and rainy in the northern part of the state, which somewhat interfered with the bees in gathering honey. Notwithstanding this fact, one honey-producer averaged 100 pounds of honey per colony from 50 colonies.

Mr. Frank Beach, secretary of the Idaho Honey Producers' Association in a recent report says:

"The Idaho Honey Producers' Association has been organized about two years and this year is marketing its second crop of honey. The bee keepers of the south-eastern portion of the state of Idaho had long had an association for the buying of supplies and the marketing of their honey, and they worked on the plan of paying into their association a fee of $1.00 a year each and put their honey together and send to market, and buying their supplies in carloads and paying for them by collecting the amount from each member. A few of the larger bee keepers thought that a corporation could handle the business to better advantage than an association.

"Accordingly a meeting was called of all the bee keepers. We now operate under the name of the Idaho Honey Producers' Association and the object of the organization is not for profit, only so far as it enables the producers of honey to get a better price for their product and to buy their necessary supplies at the lowest possible price. Stock is sold to the members at $5.00 a share and the association guarantees to pay 8 per cent interest on the stock; all above the dividend that is made by the association is returned to the stockholders who market their honey in proportion to the amount of honey produced.

"Last year there were 60 bee keepers subscribing for stock. The association market six carloads of extracted honey. There are now 97 stock certificates issued and the association will market 13 carloads of honey in 1912. This honey has been sold in Minnesota, Canada, Illinois and Ohio, and we have marketed at a higher price than that produced in other portions of the state. Our members are located up and down the Snake river, covering a large territory. We have members at Twin Falls, Heyburn, Buhl, Rock Creek, Rupert, Blackfoot, Shelley, Basalt, Firth, Idaho Falls, Roberts, Iona, Parker, Rexburg, Rigby, Salem, Ashton, St. Anthony, Ammon and Lorenzo. It is our object to get all the bee keepers of the state into the organization as we believe that by having more honey to market we can get better prices, as buyers then become acquainted with our honey and know of the high quality we produce. Our honey is like the potatoes and apples produced by the state. There is nothing better produced.

"Formerly one firm got all the honey produced by our bee keepers, now we are putting it out to several firms and our honey is becoming better known. The members get all that the honey brings, except a small percentage taken for expenses of marketing, and he gets his supplies at the same price any merchant can buy them for, thereby making a saving of 30 to 35 per cent on all the supplies he buys.

"About half of the bees of the state, according to the 1910 census, are represented in our association, and we have members with only a few colonies and we have one member with 3,000 colonies.

"N. E. Miller of Blackfoot has 3,000 colonies; Weber Bros. of Blackfoot have 1,000 colonies; J. J. Anderson of Salem has 900; L. A. Coblentz of Rigby has 600; H. F. Haskins of Idaho Falls has 400. The members who are in the business as a profession are doing well and find that with care and attention the bees well repay the trouble and outlay. Mr. Coblentz, who is one of our professional bee keepers, produced two cars of comb and extracted honey. J. J. Anderson of Salem, than whom there is no better bee keeper in our association, uses a power extractor and electricity for power in one apiary and gasoline engines in two others. He says it pays to use the power extractor, as it saves human effort and is more servicable. He has bought an automobile to use in the care of his bees. He had 500 colonies, spring count, this year and has increased them to 900 colonies and has produced two carloads, or about 70,000 pounds of extracted honey."

A FOUNTAIN OF WEALTH.

Several of the better orchard districts in Idaho now use the pipe method of distributing water under pressure upon the tracts. This method allows the maximum use of water with a minimum loss. Notice the clean cultivation which is commonly practiced in the young orchards. Irrigation as shown in this illustration is a simple and easy task. Where cultivation is frequent, as shown herewith, two or three irrigations per season are all that are needed.

IN THE PEACH-APPLE COUNTRY.

Many orchardists interplant their apple trees, using the peach as a "filler." The above illustration shows a commercial orchard the third season after transplanting one-year-old trees. The peach usually gives a crop the third year after transplanting. Four or five peach crops may be taken before the apple trees become crowded and require the space. When the apple trees become older, not only the peach trees are removed, but the alternate apple trees are also taken out, leaving the permanent trees in the apple orchard standing at 30 to 32 feet apart each way.

WINE IN THE MAKING.

This vineyard and the adjoining peach and apple orchard are, next year, to become the home of a New Yorker, who anticipates Idaho as his future residence. Many people buy tracts of land, suited to orchards, and have their trees and vineyards developed for them, and bring their families and establish their homes when the orchards and vineyards have reached the producing stage. In favored localities, the Mediterranean types of grapes are successfully grown upon a commercial scale. The Tokays, Muscatel and other of the more tender varieties which are grown in parts of Idaho rival the choicest products that are grown in Italy, Spain or France.

A HORSE THAT NEVER TIRES.

The above 45-horse power gas tractor draws an eight-bottom gang-plow with drag harrow attached and is capable of turning 36 acres daily by using a headlight and operating at night, which is a common practice during the spring rush in some of the larger orchards.

Recapitulation

Population, January, 1913, 385,094.

School population, 104,735.

Area of state, 84,800 square miles, or 54,272,000 acres.

Areas of lakes and streams, 341,760 acres.

Area of allotted and unalloted Indian lands, 481,518 acres.

Area of undeveloped cut-over lands, 300,000 acres.

Land area unappropriated and unreserved in Idaho (1911) 24,123,037 acres, equal to 45.22 per cent of the total land area of the state, of which 5,000,000 acres are classified as being suitable for dry farming and available to entry under the Enlarged Homestead laws.

1,300,000 acres of state lands suitable for dry farming.

1,843,039 acres now cultivated and under irrigation.

800,000 acres of undeveloped land where water is now available for irrigation.

1,200,000 acres of state land where irrigation is not necessary for the successful cultivation of agricultural crops.

Original homestead entries during 1911, covering 1,099,796 acres.

Public and Indian lands entered for cash during 1911, 1,191,012 acres.

Railroad selections during 1911, 21,392 acres.

More than 4,500,000 acres of the public domain in Idaho entered during the biennial period ending December, 1912.

Acres under completed irrigation systems, 2,707,879.

Length of irrigation canals now operating, 12,759 miles.

Total amount expended upon irrigation systems to 1910, $40,983,682.

Estimated cost of additional projects segregated under the Carey Act, and under course of construction, $25,806,000.

Amount of electrical horse power now generated from the streams of the state, as herewith catalogued, 129,755.

Estimated amount not included in the table herewith published, 65,000 horse power, making a total of 194,755.

Maximum capacity of electrical plants now finished or under construction, 372,055 horse power.

Saw-mills operating during the year 1912, 275.

Forest areas contain 129,000,000,000 feet, b. m., 55% of which is included in the National Forests.

Five beet sugar factories produced during 1912, 48,606,500 pounds.

OFFICIAL DIRECTORY
—of—
STATE, JUDICIAL AND LEGISLATIVE OFFICERS OF THE STATE OF IDAHO, 1913-1914.

Compiled by Secretary of State.

State Officers

Governor	John M. Haines	Boise
Lieutenant Governor	Herman H. Taylor	Sandpoint
Secretary of State	Wilfred L. Gifford	Lewiston
State Auditor	Fred L. Huston	Idaho Falls
State Treasurer	O. V. Allen	Boise
Attorney General	Joseph H. Peterson	Boise
Superintendent of Public Instruction	Grace M. Shepherd	Boise
Inspector of Mines	Robert N. Bell	Boise

Congressional Delegation

Senator	William E. Borah	Boise
Senator	James H. Brady	Pocatello
Representative	Burton L. French	Moscow
Representative	Addison T. Smith	Twin Falls

Supreme Court—Term Six Years

Chief Justice	James F. Ailshie	Grangeville
Associate Justice	Isaac N. Sullivan	Hailey
Associate Justice	George H. Stewart	Boise

District Judges—Term Four Years

Judge of the First Judicial District	W. W. Woods	Wallace
Judge of the Second Judicial District	Edgar C. Steele	Moscow
Judge of the Third Judicial District	Carl A. Davis	Boise
District	Charles P. McCarthy	Boise
Judge of the Fourth Judicial District	Edward A. Walters	Shoshone
District	Chas. O. Stockslager	Twin Falls
Judge of the Fifth Judicial District	Alfred Budge	Pocatello
Judge of the Sixth Judicial District	James M. Stevens	Blackfoot
Judge of the Seventh Judicial District	Edward L. Bryan	Caldwell
Judge of the Eighth Judicial District	Robert N. Dunn	C'r d'Alene
District	John M. Flynn	C'r d'Alene
Judge of the Ninth Judicial District	James G. Gwinn	St. Anthony

Board of Examiners.

Office—	Name	P. O. Address
Governor	John M. Haines	Boise
Secretary of State	Wilfred L. Gifford	Lewiston
Attorney General	Joseph H. Peterson	Boise

Board of Land Commissioners.

Governor	John M. Haines	Boise
Secretary of State	Wilfred L. Gifford	Lewiston
Attorney General	Joseph H. Peterson	Boise
Supt. Public Instruction	Grace M. Shepherd	Boise
State Auditor	Fred L. Huston	Idaho Falls

Board of Pardons.

Governor	John M. Haines	Boise
Secretary of State	Wilfred L. Gifford	Lewiston
Attorney General	Joseph H. Peterson	Boise

Board of Prison Commissioners.

Governor	John M. Haines	Boise
Secretary of State	Wilfred L. Gifford	Lewiston
Attorney General	Joseph H. Peterson	Boise

Board of Management of Capitol Building and Grounds.

Governor	John M. Haines	Boise
Secretary of State	Wilfred L. Gifford	Lewiston
State Treasurer	O. V. Allen	Boise

State Capitol Commission.

Governor	John M. Haines	Boise
Secretary of State	Wilfred L. Gifford	Lewiston
State Treasurer	O. V. Allen	Boise
Member of Board	A. J. Wiley	Boise
Member of Board	F. R. Coffin	Boise

Board of Education.

Supt. Public Instruction	Grace M. Shepherd	Boise
Secretary of State	Wilfred L. Gifford	Lewiston
Attorney General	Joseph H. Peterson	Boise

Board of Equalization.

Governor	John M. Haines	Boise
Secretary of State	Wilfred L. Gifford	Lewiston
State Treasurer	O. V. Allen	Boise
Attorney General	Joseph H. Peterson	Boise
State Auditor	Fred L. Huston	Idaho Falls

Board of Canvassers

Governor	John M. Haines	Boise
Secretary of State	Wilfred L. Gifford	Lewiston
State Treasurer	O. V. Allen	Boise
Attorney General	Joseph H. Peterson	Boise
State Auditor	Fred L. Huston	Idaho Falls

Board of Trustees of Soldiers' Home.

Governor	John M. Haines	Boise
Secretary of State	Wilfred L. Gifford	Lewiston
Attorney General	Joseph H. Peterson	Boise

State Library Commission.

Attorney General	Joseph H. Peterson	Boise
Secretary of State	Wilfred L. Gifford	Lewiston
Supt. Public Instruction	Grace M. Shepherd	Boise
President State University	W. L. Carlyle	Moscow

State Officials—(Appointed by the Governor).

State Engineer	Frank P. King	Boise
State Bank Examiner	A. E. Reid	Spirit Lake
Insurance Commissioner	E. F. Van Valkenburg	Boise
State Fish and Game Warden	O. H. Barber	Am. Falls
State Veterinarian	V. C. White	Blackfoot
Adjutant General	L. V. Patch	Payette
State Horticultural Inspector	John U. McPherson	Boise
State Pure Food Inspector	James H. Wallis	Boise
State Chemist	H. Louis Jackson	Boise
Register State Land Board (appointed by the State Land Board)	N. Jenness	Boise
Warden State Penitentiary (appointed by the State Prison Commissioners)	John W. Snook	Boise
Supt. Deaf and Blind School (appointed by Board of Education)	W. E. Taylor	Gooding
Commandant Soldiers' Home (appointed by Trustees Soldiers' Home)	Col. Willard White	Boise
State Librarian (appointed by State Library Commission)	S. Roberts	Boise
State Law Librarian (appointed by Supreme Court)	Minnie Priest Dunton	Boise

Officers of State Institutions.

University of Idaho—W. L. Carlyle, President ..... Moscow
Academy of Idaho—Miles F. Reed, Principal ..... Pocatello
Lewiston State Normal School—Geo. H. Black, President ..... Lewiston
Albion State Normal School—G. A. Axline, President ..... Albion
Industrial Training School—J. T. Humphries, Superintendent ..... St. Anthony
State School for Deaf and Blind—W. E .Taylor, Superintendent ..... Gooding
Idaho Soldiers' Home—Col. Willard White, Commandant ..... Boise
State Insane Asylum—Francis H. Pool, Superintendent ..... Blackfoot
State Insane Asylum (Orofino)—J. W. Givens, Superintendent ..... Orofino
Idaho State Penitentiary—John W. Snook, Warden ..... Boise
Idaho State Sanitarium—E. H. Dewey, Director ..... Nampa
State Board of Health—Dr. Ralph Falk, Secretary ..... Boise
State Board of Medical Examiners—Dr. O. J. Allen, Secretary ..... Bellevue
State Board of Osteopathy—Dr. E. G. Houseman ,Secretary ..... Nampa
State Board of Optometry—Dr. O. M. Drake, Secretary ..... Idaho Falls
State Board of Dental Examiners—Dr. A. A. Jessup, Secretary ..... Boise
State Board of Pharmacy—Thomas M. Sarrh, Secretary ..... Boise
State Board of Examination and Registration of Graduate Nurses:
Napina Hanley, Secretary ..... Boise
State Board of Horticultural Inspection—John U. McPherson, Secretary ..... Boise
State Live Stock Sanitary Board—Arthur Pence, Secretary ..... Hot Springs
State Grain Commission—Edmund Ellworth, Jr., Inspector ..... Rigby
State Water Commissioners:
Chas. H. DeCamp, District No. 1 ..... St. Anthony
Ravenal Macbeth, District No. 2 ..... Custer
John W. Cage, District No. 3 ..... Boise
Lumber Inspectors:
C. H. Meyer, District No. 1 ..... Sandpoint
John E. Wood, District No. 2 ..... Harrison
Board of Examining Surveyors:
John P. Congdon ..... Pocatello
Frederick V. Phinney ..... Coeur d'Alene
Frank P. King, State Engineer, Ex-Officio Chairman ..... Boise
Childrens' Home-Finding Society—O. P. Christian, Superintendent ..... Boise
Historical Society of the State of Idaho—John Hailey, Librarian ..... Boise

COUNTY OFFICIALS 1913-1914.

County	County Seat	Auditor	Sheriff	Assessor	Treasurer
Ada	Boise	Stephen Utter	James M. Roberts	William A. Kincaid	Maud Lowry Cleary
Adams	Council	C. W. Holmes	Frank Weaver	Philip Ware	Harriet A. Carr
Bannock	Pocatello	E. G. Gallet	E. E. Lowry	L. B. Case	Louisa Jones
Bear Lake	Paris	H. H. Broomhead	Chris Olsen	James Dunn	J. Henry Stocker
Bingham	Blackfoot	J. T. Carruth	W. R. Jones	Hyrum Grimmett	Brigham Wheeler
Blaine	Hailey	W. F. Horne	Aaron Clements	John E. Schad	Edwin B. Johnson
Boise	Idaho City	Henry Ashcroft	William H. Hiatt	James Darkwood	Gideon B. Pettus
Bonner	Sandpoint	Robert S. McCrea	H. S. Remer	W. W. Von Canon	Andrew Christenson
Bonneville	Idaho Falls	Frank W. Jordan	Jos. L. Mulliner, Jr.	Moses J. Wright	Katherine T. Johnston
Canyon	Caldwell	George W. Stovel	Frank Breshears	A. O. Christopher	Will Monk
Cassia	Albion	George A. Smith	William O. Pratt	Oliver B. Pickett	Mrs. Florence Wilson
Clearwater	Orofino	Joseph Kauffman	A. L. Harper	John T. Molloy	Blair E. Hoar
Custer	Challis	Earl J. Michael	W. K. Huntington	Daniel M. Burnett	Alice B. Chamberlain
Elmore	Mountainhome	Frank C. Smith	Arthur A. Stevens	Frank M. Hobbs	Mrs. W. H. Calloway
Fremont	St. Anthony	Alfonso M. Carter	Edward J. Harrop	Conrad Walz	Harry Randall
Idaho	Grangeville	Jerome A. Bradbury	John P. Eimers	Hervin Rothwell	Frank S. Rice
Kootenai	Coeur d'Alene	D. E. Danby	A. P. Bailey	Charles E. Acton	Robt. F. Kercheval
Latah	Moscow	Homer E. Estes	C. C. Brown	Theodore E. Martinson	Ruth W. Broman
Lemhi	Salmon	James L. Kirtley, Jr.	Thomas J. Stroud	Albert H. Ford	George W. Meitzler
Lewis	Nezperce	Clyde E. Clovis	Manford H. Paige	Elias H. Ratliff	Lutner T. McKee
Lincoln	Shoshone	Harry W. Anderson	L. M. Zug	John See	Fred A. Clark
Nez Perce	Lewiston	James R. Lydon	Harry Lydon	William R. Wyatt	John L. Chapman
Oneida	Malad	John J. Evans	S. T. Merrell	R. M. Hull	Cora Dudley
Owyhee	Silver City	John S. St. Clair	Michael Rock	William A. Lewis	Margaret Cavaney
Shoshone	Wallace	John P. Sheehy	Thomas McCabe	John Dolan	Kathryn O'Rourke
Twin Falls	Twin Falls	E. J. Finch	H. C. Vanausdeln	James W. Beauchamp	W. J. Young
Washington	Weiser	Frank E. Smith	William B. Walker	Alva J. Steward	James A. Sommercamp

County	County Seat	Attorney	Probate Judge	Supt. of Schools	Surveyor
Ada	Boise	Raymond L. Givens	William C. Dunbar	Ivy M. Wilson	Harry J. Cole
Adams	Council	B. J. Dillon	P. A. McCallum	J. D. Neale	G. L. McCall
Bannock	Pocatello	C. D. Smith	O. J. Bell	Alice G. Cosgrove	Oscar Sonnenkalb
Bear Lake	Paris	Jesse P. Rich	Edward J. Haddock	Alfred A. Hart	Ed. V. Bucher
Bingham	Blackfoot	James E. Good	J. H. Anderson	Alice Beach	A. E. Christensen
Blaine	Hailey	Richard M. Angel	Harry A. Adams	Bertha H. Black	Lorenz A. Dithmer
Boise	Idaho City	D. L. Rhodes	Omer R. Woods	Blanche S. Besecker	Lew A. Wilson
Bonner	Sandpoint	Wm. J. Costello	R. F. Wood	J. W. Ramsey	Clyde J. Chaffins
Bonneville	Idaho Falls	Robert S. Meyer	Squire G. Crowley	Ella M. Miller	Nathan E. Snell
Canyon	Caldwell	B. H. Henry	David D. Harger	Z. Fay Fowler	Fred H. McConnell
Cassia	Albion	Louis A. Bauman	Thomas E. Harper	John I. Burgess	George L. Snow
Clearwater	Orofino	A. A. Holsclaw	P. H. Blake	E. Maud Mix	Roy La Baron
Custer	Challis	Andrew J. Higgins	George B. Baldwin	Jennie E. Kelleher	Samuel M. Ballard
Elmore	Mountainhome	W. L. Harvey	P. H. Gray	Kate L. Brady	Stanton Park

COUNTY OFFICIALS 1913-1914—(Continued)

County	County Seat	Attorney	Probate Judge	Supt. of Schools	Surveyor
Fremont	St. Anthony	Arthur H. McConnell	Otis M. VanTassel	Harriet C. Wood	Andrew S. Anderson
Idaho	Grangeville	M. Reese Hattabaugh	James De Haven	Percy L. Glanville	E. Clifford Spedden
Kootenai	Coeur d'Alene	N. D. Wernette	Bert A. Reed	Robert C. Egbers	A. O. Modlin
Latah	Moscow	John Nisbet	Will F. Morgareidge	Catherine T. Bryden	Harvey J. Smith
Lemhi	Salmon	George W. Padgham	F. P. McCracken	Elizabeth M. Sims	Edwin B. Thornhill
Lewis	Nezperce	Frank E. Fogg	Thomas M. Roberts	Eva B. Henderson	A. J. Warren
Lincoln	Shoshone	Harlan D Heist	H. B. Jones	Stella Cook	Edw. S. Smith
Nez Perce	Lewiston	Miles S. Johnson	Daniel Needham	Ethel E. Redfield	Eugene M. Booth
Oneida	Malad	T. E. Ray	L. B. Evans	Henry Simpson	S. P. Morgan
Owyhee	Silver City	C. E. Melvin	F. S. Heer	Jennie F. Avery	Franklin W. Hewlett
Shoshone	Wallace	Carlton Fox	Lawrence E. Worstell	Florence M. Zumhof	George R. Trask
Twin Falls	Twin Falls	A. R. Hicks	J. M. Shank	Bertha M. Noel	James A. Bybee
Washington	Weiser	James Harris	John W. Ayers	Edna M. Lockwood	Karl L. Keyes

County	County Seat	Coroner	County Commissioners		
Ada	Boise	Adolph Schreiber	William Howell	Gus Carlson	William M. Briggs
Adams	Council	L. A. Harris	C. E. Steward	Frank Hahn	William Branstetter
Bannock	Pocatello	O. B. Steely	Meyers Cohn	George Gittins	Jo. B. Wright
Bear Lake	Paris	Jas. P. Nowland	Ezra Howell	John T. Peterson	John Quayle
Bingham	Blackfoot	E. T. Peck	James Christensen	E. M. Kennedy	T. P. Fackrell
Blaine	Hailey	Robert H. Wright	James M. Jones	William L. Adamson	George W. Peck
Boise	Idaho City	Robert S. Edwards	James C. Mills	James H. Connaughton	Lorin M. Gorton
Bonner	Sandpoint	W. M. Knapp	John G. Nagle	George McCombs	Don C. McCall
Bonneville	Idaho Falls	Joseph Morley	Clinton G. Peck	Lars Hansen	Eli T. Simmons
Canyon	Caldwell	F. K. Robinson	H. A. Partridge	W. B. Mitchell	Erastus A. Blair
Cassia	Albion	Loren B. Gallogly	H. H. Thornton	John McMurray	John Lowe
Clearwater	Oro Fino	Geo. W. Wilfong	Frank Harrison	Frank Zalenka	E. O. Torgerson
Custer	Challis	Joseph L. Ebberts	Jonathan Job	Robert Campbell	Reuben H. Ewing
Elmore	Mountainhome	H. H. Eaton	R. D. Gorby	George E. Butler	Christ Hendricks
Fremont	St. Anthony	Walter Walker	George A. Cordon	Alfred Ricks	William L. Flint
Idaho	Grangeville	Henry B. Blake	N. B. Pettibone	John D. Long	John N. Rice
Kootenai	Coeur d'Alene	John H. Shepard	I. A. Libby	F. W. Esgate	C. N. Downie
Latah	Moscow	Leonidas B. McCartor	A. B. McIntire	Clinton Wilson	John L. Woody
Lemhi	Salmon	William C. Doebler	Thomas J. Atkins	William Oltmer	Charles M. Hull
Lewis	Nezperce	H. C. Parrish	Nicholas B. Schlader	Isaac P. Regan	Irving H. Lowrey
Lincoln	Shoshone	Charles F. Zeller	W. J. Tapper	J. M. Staples	C. C. Nelson
Nez Perce	Lewiston	Clyde J. Vassar	E. W. Wing	Gus D. Thiessen	William J. Green
Oneida	Malad	Henry Meyer	D. J. Reynolds	Andrew May	L. L. Hatch
Owyhee	Silver City	Thomas D. Farrer	Lucius C. Gardner	Patrick P. Kelly	Frank H. Laird
Shoshone	Wallace	Charles R. Mowery	John F. Murphy	J. B. Cox	Alexander P. McRae
Twin Falls	Twin Falls	Charles J. Crosby	C. H. Taylor	O. E. Carlson	O. G. Zuck
Washington	Weiser	James T. McCann	William C. Wilson	A. D. Redford	Peter M. Gladhart

Members of the Legislature, 1913-1914.

County	Senators	Address	Representatives	Address
Ada	Sherman D. Fairchild	Mora	Charles F. Koelsch	Boise
			Charles D. Storey	Boise
			Frank M. Gardner	Eagle
			H. A. Lawson	Boise
			T. H. McDermott	Meridian
Adams (1)	Edward M. Barton	Weiser	William M. Brown	Landore
Bannock	J. Frank Hunt	Swan Lake	H. V. A. Ferguson	Pocatello
			D. J. Lau	Soda Springs
			W. H. Mendenhall	Thatcher
Bear Lake	J. R. Shepherd	Paris	Fred C. Evans	Thomas Fork
			Chas. E. Wright	Montpelier
Bingham (2)	Geo. W. Edgington	Idaho Falls	P. G. Johnston	Blackfoot
			Albert S. Dickenson	Blackfoot
Blaine	Joseph G. Hedrick	Hailey	Stewart Campbell	Hailey
			John S. Parks	Howe
Boise	Charles W. Luck	Lardo	Arnold Mickles	Roseberry
Bonner	Byron Defenbach	Sandpoint	Earl D. Farmin	Sandpoint
			E. E. Elliott	Bonners Ferry
			A. H. Connor	Sandpoint
Bonneville (3)	Geo. W. Edgington	Idaho Falls	W. L. Shattuck	Idaho Falls
			Charles L. Warnick	Idaho Falls
Canyon	H. C. Baldridge	Parma	A. J. Rockwood	Roswell
			C. S. French	New Plymouth
			R. W. Oakes	Caldwell
			Henry C. Bradley	Nampa
			Harry T. Lewis	Fruitland
Cassia	Hector C. Haight	Oakley	David A. Taylor	Burley
Clearwater (4)	Adams G. Johnson	Nez Perce	William M. Chandler	Orofino
Custer	Ravenal Macbeth	Mackay	C. A. Clark	Mackay
Elmore	Worth S. Lee	Mount'nhome	Joseph Rosevear	Glenns Ferry
Fremont	John W. Hart	Menan	Guy E. Bowerman	St. Anthony
			Ralph S. Hunt	Rexburg
			Robert Gilchrist	Lewisville
			Rodney D. Merrill	Ashton
Idaho	Hiram E. Sweet	Grangeville	Abe L. Harchelrode	Winona
			H. Floyd Church	Grangeville
Kootenai	P. W. Johnson	Coeur d'Alene	William H. Edelblute	Rathdrum
			Roger G. Wearne	Coeur d'Alene
			Charles A. Norton	Hayden Lake
			William F. Sargent	St. Maries
Latah	George Fields	Moscow	Columbus Clark	Juliaetta
			William H. Mason	Moscow
			August H. Oversmith	Troy
Lemhi	Don C. Reed	Leadore	Roy B. Herndon	Salmon
Lewis (5)	Adams G. Johnson	Nez Perce	Eugene S. Friend	Kamiah
Lincoln	C. F. Borden	Shoshone	L. R. Adams	Rupert
			E. Ralph Evans	Gooding
Nez Perce	Jacob L. Goodnight	Lewiston	George Finke	Cameron
			Sherman C. Case	Culdesac
Oneida	D. W. Davis	Amer. Falls	James Neilson	Weston
			Adelbert D. Henderson	Clifton
			James Johnson	Preston
Owyhee	Dow Dunning	Morgan	William Healy	Silver City
Shoshone	Walter H. Hanson	Wallace	Albert H. Featherstone	Wallace
			Robert O. Jones	Kellogg
			M. J. Sinclair	Kellogg
Twin Falls	C. A. Robinson	Twin Falls	L. G. Hayford	Buhl
			Fred Nihart	Buhl
			C. E. Booth	Twin Falls
Washington (6)	Edward M. Barton	Weiser	Frank D. Ryan	Weiser

1—Joint District with Washington County.
2—Joint District with Bonneville County.
3—Joint District with Bingham County.
4—Joint District with Lewis County.
5—Joint District with Clearwater County.
6—Joint District with Adams County.

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PROUD OF HER CATCH.

The gamey resistance offered to the angler in landing fish of this variety will furnish enough thrill to rejuvenate the victim of shattered nerves and insomnia and cause all memory of school room problems and counting room perplexities to vanish.

The Yellowstone will furnish a blend of magnificent beauty and awe-inspiring wonder that will provoke wholesome, noble thoughts and a reverence for natural creations. In many parts of Idaho will be found extremely inviting vacation districts.

Have you resolved to "See America First?"

Why not begin with a fishing trip in Idaho?

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See that your Railway Ticket to or from the Coast reads via IDAHO. Five Transcontinental Railway Systems serve the State. There are many branch lines. Liberal stop-over privileges are granted. Write the bureau for copy of State Map with detail information.

Of course, you will want to visit the Yellowstone National Park.

See America First! Begin with Idaho!

SEE AMERICA FIRST—BEGIN WITH IDAHO